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1962

WILDLIFE REVIEW

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UNITED STATES DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE

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WILDLIFE REVIEW

An abstracting service for wildlife management
Issued for the information of cooperators
by the Fish and Wildlife Service
United States Department of the Interior

December 1962 Patuxent Wildlife Research Center, Laurel, Maryland No. 108

Use of funds for printing this publication approved
by the Director of the Bureau of the Budget, October 3, 1960.

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Except as indicated, abstracts are by Kenneth J. Chiavetta, editor,
and Paul A. Stewart, assistant editor.

NATURAL RESOURCES & CLIMATE

Clement, Roland C. ON DIVERSITY IN NATURE. Atlantic Nat. 17(1): 23-27, 1 fig. Jan.-Mar. 1962. WR 108: 2

Climatic stability of the tropics favors biotic diversity, with many species but few individuals of species because of competition between species. In the relatively uniform biota of temperate and northern latitudes, widespread use of pesticides may further simplify the biotic community, thus favoring pest species and leading to insect outbreaks. With decimation in numbers of a pest species, restricting pressures on the species are reduced and the survivors of the pest species may thus be able to reproduce with less natural restriction.

Curry-Lindahl, Kai. (Zool. Dept., Nordiska Museet & Skansen, Stockholm, Sweden.) LANDSCAPE CHANGES AND THE VERTEBRATE FAUNA IN SWEDEN DURING THE LAST 150 YEARS. Bijdragen tot de Dierkunde 31: 27-44, 14 figs. 1961. WR 108: 2

An outline of the floral changes that have occurred in Sweden and the subsequent faunal changes. "Consideration has been paid only to those vertebrate species which, during a long period of observation, have shown either a clear increase or decrease, not only in frequency, but above all in geographical distribution. During recent centuries 91 species of Swedish vertebrates have shown significant fluctuations in frequency. Of these, 45 have increased while 46 have decreased. Birds are in the majority in both groups, with 35 species increasing and 30 decreasing. The equivalent figures for mammals are 5 and 13."

Hay, John, and Arline Strong. A SENSE OF NATURE. Doubleday & Co., Inc. (New York 22, N. Y.) 128 p., illus. 1962. $4.95. WR 108: 2

This is a collection of 125 generally good outdoor photographs. Children appear in nearly three-fourths of the photographs, and nature-probing experiences of preadolescent children are central features of the book. The emphasis on human subjects sometimes gives the user of the book the feeling of examining a stranger's family album, but the action-packed nature of the photographs soon dispels this feeling. The photographs will be most appreciated by nature hike leaders and parents of nature-minded preadolescent boys. Many of the photograph captions ask rather than answer questions, and the book will serve more to arouse interest than to provide information.--Paul A. Stewart.

Hutchison, S. Blair. RECREATION OPPORTUNITIES AND PROBLEMS IN THE NATIONAL FORESTS OF THE NORTHERN AND INTERMOUNTAIN REGIONS. Intermountain Forest & Range Expt. Sta., Res. Pap. 66. vi + 33 p., 22 figs. Apr. 1962. WR 108: 2

An excellently illustrated and most thought provoking booklet describing the problems, both present and future, of the National Forests. The tremendous overuse of natural areas, causing their deterioration, is discussed in detail. A consideration of the role national forests should play in recreation is given and a number of questions are raised. A series of proposals are listed towards which research should be focused with regards to national forest use.--W. T. Van Velzen.

Huxley, Julian. EASTERN AFRICA: THE ECOLOGICAL BASE. Endeavour 21(82): 98-107, 17 figs. Apr. 1962. WR 108: 2

Africa needs a planned use of resources, based on ecological considerations. Yield of income may be higher when utilizing animals naturally adapted to occupy various habitat niches than when displacing natural populations with species which utilize only a part of the available habitat.

Murphy, Robert Cushman. ANTARCTIC CONSERVATION. Science 135(3499): 194-197, illus. 19 Jan. 1962. WR 108: 2

A timely warning of a need for careful planning and cooperation in conservation practices in the Antarctic. The responsibility of man to prevent contamination by the many factors that have destroyed other natural areas is emphasized. The risk of contamination with alien forms of life appears to be relatively slight but recent occurrences suggest a chance for feral dogs to become established.--W. T. Van Velzen.

Swift, Ernest. COUNT DOWN TO SURVIVAL. Natl. Wildl. Federation. v + 54 p. 1961. WR 108: 3
This booklet emphasizes the importance of character and understanding. It is a vigorous plea for appreciation of the intangible as well as the tangible values of natural resources and for nurture of the human qualities necessary for their preservation.--Samuel T. Dana.

SOILS

Allgood, Ferris P., and others. SOIL SURVEY OF BEAVER COUNTY, OKLAHOMA. SCS, Ser. 1959, no. 11. i + 80 p., 39 figs. + single-fold maps based on aerial photos and bound in. Aug. 1962. Sold by Supt. Documents. WR 108: 3

Arkley, Rodney J. SOIL SURVEY OF MERCED AREA, CALIFORNIA. SCS, Ser. 1950, no. 7. i + 131 p., 17 figs. + single-fold maps based on aerial photos and bound in. July 1962. Sold by Supt. Documents. WR 108: 3

Camp, W. J., and others. SOIL SURVEY OF SALUDA COUNTY, SOUTH CAROLINA. SCS, Ser. 1958, no. 21. i + 103 p., 12 figs. + single-fold maps based on aerial photos and bound in. Aug. 1962. Sold by Supt. Documents. WR 108: 3
Includes a section on wildlife.

Clark, H. L., and others. SOIL SURVEY OF ACADIA PARISH, LOUISIANA. SCS, Ser. 1959, no. 15. i + 57 p., 19 figs. + folded maps based on aerial photos and bound in. Sept. 1962. Sold by Supt. Documents. WR 108: 3
Included is a section on the management of the soils for wildlife.

Clay, J. H., and others. SOIL SURVEY OF MATHEWS COUNTY, VIRGINIA. SCS, Ser. 1958, no. 24. i + 44 p., 13 figs. + single-fold maps based on aerial photos and bound in. Nov. 1962. Sold by Supt. Documents. WR 108: 3

Curle, Lawrence D., and others. SOIL SURVEY OF YADKIN COUNTY, NORTH CAROLINA. SCS, Ser. 1959, no. 16. i + 74 p., 12 figs. + folded maps based on aerial photos and bound in. Nov. 1962. Sold by Supt. Documents. WR 108: 3
Includes a section on wildlife.

Fisher, Glenn, and others. SOIL SURVEY OF CARBON COUNTY, PENNSYLVANIA. SCS, Ser. 1959, no. 14. i + 108 p., 6 figs. + single-fold maps based on aerial photos and bound in. Nov. 1962. Sold by Supt. Documents. WR 108: 3

Garner, Dale, and others. SOIL SURVEY OF CLINTON COUNTY, OHIO. SCS, Ser. 1958, no. 23. ii + 113 p., 9 figs. + single-fold maps based on aerial photos and bound in. Sept. 1962. Sold by Supt. Documents. WR 108: 3
Includes a section entitled "Management for Wildlife".

Klingelhoets, A. J. SOIL SURVEY OF IOWA COUNTY, WISCONSIN. SCS, Ser. 1958, no. 22. i + 101 p., 22 figs. + folded maps based on aerial photos and bound in. July 1962. Sold by Supt. Documents. WR 108: 3

Koos, William H., and others. SOIL SURVEY OF WILBARGER COUNTY, TEXAS. SCS, Ser. 1959, no. 18. i + 64 p., 18 figs. + single-fold maps based on aerial photos and bound in. Sept. 1962. Sold by Supt. Documents. WR 108: 3
Includes a section on wildlife habitats.

Olsen, Marvin E. SOIL SURVEY OF THE SAN JUAN AREA, UTAH. SCS, Ser. 1945, no. 3. i + 47 p., 13 figs. + folded maps based on aerial photos. Aug. 1962. Sold by Supt. Documents. WR 108: 3

Schlots, Fred E., and others. SOIL SURVEY OF SAN JUAN COUNTY, WASHINGTON. SCS, Ser. 1957, no. 15. i + 73 p., 20 figs. + folded maps based on aerial photos and bound in. Nov. 1962. Sold by Supt. Documents. WR 108: 3

BIBLIOGRAPHIES, DIRECTORIES, BIOGRAPHY, HISTORY

Halloran, Arthur F., and Jack D. Haley. (Wichita Wildl. Refuge, Cache, Okla.) A BIBLIOGRAPHY OF THE WICHITA MOUNTAINS OF OKLAHOMA. Great Plains Hist. Assoc. 26 p. Spring 1962. WR 108: 4

A collection of approximately 450 references grouped as popular, general or historical and scientific material, many of which are of wildlife significance.

Osborn, Katherine H., Ray A. Yoder, and William I. West. FORESTRY THESES ACCEPTED BY COLLEGES AND UNIVERSITIES IN THE UNITED STATES / SUPPLEMENT JULY 1960-JUNE 1961 INCLUDING ADDITIONS FOR 1915-JUNE 1960. Forest Sci. 8(3): 309-320. Sept. 1962. WR 108: 4

Author and subject indices are appended to this list of 239 forestry theses (arranged by institution).

PLANTS--GENERAL, ECOLOGY, TECHNIQUES

Bolen, Eric George. ECOLOGY OF SPRING FED SALT-MARSHES. M.S. thesis, Utah State Univ. x + 124 p., 27 figs. 1962. WR 108: 4

A study of the plant ecology of Fish Creek National Wildlife Refuge in western Utah. Analysis of randomly selected plots indicated the existence of the following communities: desert upland, Distichlis, Juncus, Phragmites, Eleocharis, emergent-marsh, and submersed communities. Salinity, moisture, pH, and organic content were soil factors considered.

Brown, Robert L., and A. L. Hafenrichter. STABILIZING SAND DUNES ON THE PACIFIC COAST WITH WOODY PLANTS. USDA, Misc. Publ. no. 892. 18 p., 17 figs. 1962. Sold by Supt. Documents. WR 108: 4

Recommendations are given for species suitable for planting on coastal dunes.

Conrad, C. Eugene, and Merton J. Reed. AUTOMATIC DATA PROCESSING OF RANGE VEGETATION INFORMATION. Pacific SW Forest & Range Expt. Sta., Res. Note no. 201. 5 p., 2 figs. 1962. WR 108: 4

Abstract: More than 2-1/4 man-months of laboratory and field time were saved by using automatic data processing in a large-scale continuing study of vegetation characteristics. A high-speed computer solved 57 separate problems in less than an hour, enabling researchers to determine sampling requirements for 19 species or species groups in three range sites.

Lawrence, William H., and J. H. Rediske. (Weyerhaeuser Co., Forestry Res. Center, Centralia, Wash.) FATE OF SOWN DOUGLAS-FIR SEED. Forest Sci. 8(3): 210-218, 2 figs. 1962. WR 108: 4

This report presents an accounting of the fate of 440 radio-tagged Douglas-fir seeds. Tagging seeds with Sc^{46} provides the means to relocate seeds in the field and permits the appraisal, on an individual seed basis, of factors responsible for seed destruction. Pre-germination losses amounted to 46% with molds (20%), insects and other soil invertebrates (10%), rodents (8%), and birds (3%) responsible for seed destruction. Post-germination losses amounted to 15% and 27% failed to germinate. Damping-off was the principal cause of seedling mortality.--From abstr. by W. H. Lawrence.

Lay, Daniel W. (Texas Game & Fish Comm., Buna.) FRUIT PRODUCTION OF SOME UNDERSTORY HARDWOODS. Proc. 15th Ann. Conf. SE Assoc. Game & Fish Comms. p. 30-37. 1961 [1962]. WR 108: 4

Production of 20 to 65 lb of fruit per square foot of basal area was found for five understory species compared with 2 to 8 lb reported for oak species. Counts of fruit and equations for estimating fruit production are reported for several species.--From auth. summ.

Woodwell, G. M. (Univ. Maine, Orono.) EFFECT OF DDT ON CONE PRODUCTION, GERMINATION, AND SEEDING SURVIVAL IN THE BORBAL FOREST. Ecology 43(3): 396-403, 5 figs. Summer 1962. WR 108: 4

In an effort to evaluate side effects of DDT treatments, a study was made to determine whether DDT affects seedling reproduction in a coniferous forest. At a rate of 1,000 gallons of oil-DDT mixture per acre, no effect was found on seedling reproduction.

PLANTS--FLORAS, COMMUNITIES, TAXONOMY

Burk, C. John. (Smith Coll., Northampton, Mass.) THE NORTH CAROLINA OUTER BANKS: A FLORISTIC INTERPRETATION. J. Elisha Mitchell Sci. Soc. 78(1): 21-28. May 1962. WR 108: 5

More than 520 species of plants were collected from the following plant communities: (1) a dune-grass community, dominated by Uniola paniculata, Spartina patens, Andropogon littoralis, Ammophila breviligulata, Panicum amarulum, and P. amarum; (2) a shrub community, dominated by Juniperus virginiana, Quercus virginiana, Myrica cerifera, and Ilex vomitoria; (3) a pine-oak-hickory forest, dominated by Pinus taeda in association with several species of Carya, Quercus falcata, Q. nigra, and Liquidambar styraciflua; (4) a tidal-marsh community, dominated by Spartina alterniflora, S. patens, and Juncus roemerianus. Observations on the effects of a hurricane upon the plant communities are included.--From auth. summ.

WILDLIFE--NEW GAME SERIES

University Microfilms, Inc. (Ann Arbor, Mich.) MASTERS ABSTRACTS / ABSTRACTS OF SELECTED MASTERS THESES ON MICROFILM. Univ. Microfilms, Inc. 1 (1). viii + 49 p. 1962. Issued quarterly at $6.00 per year. WR 108: 5

An initial volume containing 6 M.S. abstracts and a list of approximately 350 M.S. theses already on microfilm. Theses are arranged by subject categories with author's name and full title.--W. T. Van Velzen.

WILDLIFE--BIOTAS, ECOLOGY, NATURAL HISTORY

Moats, S. A. COMPARISON OF PLANT AND ANIMAL LIFE IN THE DRY ZONE OF BURMA WITH ITS HOMOCLIME IN NORTHWESTERN PENINSULAR INDIA. Ph.D. thesis. Catholic Univ. (Washington, D. C.). 58 p., map. 1960. [From Bibliog. Agr. 26(11), 1962.] WR 108: 5

Orians, Gordon H. (Univ. Wash., Seattle.) NATURAL SELECTION AND ECOLOGICAL THEORY. Am. Nat. 96(890): 257-263. Sept.-Oct. 1962. WR 108: 5

Conclusion: The roots of the current controversy which so deeply divides ecology lie much deeper than their peripheral manifestations in the argument over density-dependence and density-independence. Rather, they stem from the division of the field into two major categories--functional ecology and evolutionary ecology. Both of these approaches are valid and useful and it is a mistake to erect general ecological theory exclusively on either.

Selander, Robert K., Richard F. Johnston, B. J. Wilks, and Gerald G. Raun. (Univ. Texas, Austin 12.) VERTEBRATES FROM THE BARRIER ISLANDS OF TAMAULIPAS MÉXICO. Univ. Kans. Museum Nat. Hist. Publ. 12(7): 309-345, 4 pls. 18 June 1962. WR 108: 5

Records of 1 sp. of tortoise, 2 spp. of reptiles, 49 spp. of birds and 12 spp. of mammals collected or observed from 6 to 10 July 1961, with notes on breeding status and distribution.--W. T. Van Velzen.

WILDLIFE--EFFECTS OF CHEMICALS, WEATHER, CARS, ETC.

Gresham, Grits. PESTICIDES VS. WILDLIFE. La. Conservationist 14(9&10): 6-8, illus. Sept.-Oct. 1962. WR 108: 5

Popular review article.

[MacNamara, L. G., compiler.] SURVEY OF CAR-KILLED WILDLIFE. N. J. Outdoors 13(4): 23, 1 pl. Oct. 1962. WR 108: 5

Between March 1, 1961 and March 1, 1962, an accurate count was kept of animals killed each month along a 20-mile stretch of U. S. 46, in N. J. In the survey 476 mammals and birds were found during the year, averaging 23.8/mile or 1.9 animals/mile/month. Cottontail rabbits (173) were most frequently killed, with squirrels (86), opposums (54) and skunks (50) next in descending order of abundance.--W. T. Van Velzen.

Moore, N. W. TOXIC CHEMICALS AND BIRDS: THE ECOLOGICAL BACKGROUND TO CONSERVATION PROBLEMS. British Birds 55(10): 428-435. Oct. 1962. WR 108: 6
This is a general consideration of effects on birds of pesticides through changes of habitat and reduced reproductive success.

Peters, Harold S. (98 Querida St., Bridgeport 4, Conn.) GETTING TOGETHER ON MOSQUITO CONTROL. Proc. 48th Ann. Meeting N. J. Mosquito Extermination Assoc. p. 63-67. 1961. WR 108: 6
Great progress is being made in permanent methods for control of mosquitoes. It is hoped that toxic chemicals will be quickly replaced with less harmful materials and that these substances will be required less frequently. Wildlife values should be considered in all mosquito control programs.--From auth. summ.

Rosene, Walter, Jr., Paul Stewart, and Vyto Adomaitis. (127 Oak Circle, Gadsden, Ala.) RESIDUES OF HEPTACHLOR EPOXIDE IN WILD ANIMALS. Proc. 15th Ann. Conf. SE Assoc. Game & Fish Comms. p. 107-113. 1961 [1962]. WR 108: 6
A total of 245 animals, mostly birds, was collected from February 1958 through April 1960 from heptachlor treated and untreated land in Georgia and Alabama. Analyses were made for content of heptachlor epoxide. Content of individuals ranged from 0 to 172.0 mcg/g.--From auth. summ.

Udagawa, T. A LABORATORY AND FIELD TEST OF SULPHATE OF THALLIUM AS A RODENTICIDE. Japanese Forestry Soc. J. 44(5): 144-146. May 1962. [From Bibliog. Agr. 26(10), 1962.] WR 108: 6
In Japanese with English summary.

WILDLIFE--PARASITES & DISEASES

Bouvier, Georges. (Inst. Galli-Valerio, Lausanne, Switzerland.) ESSAIS DE TRAITEMENTS PRATIQUES CONTRE LES ECTOPARASITES NON HEMATOPHAGES DU GIBIER AU MOYEN DIUN ESTHER PHOSPHORIQUE ("NEGUVON"). [TESTS IN THE PRACTICAL TREATMENT AGAINST NON-BLOOD SUCKING ECTOPARASITES OF GAME BY MEANS OF AN ORGANOPHOSPHATE ("NEGUVON").] Trans. 5th Congr. Intern. Union Game Biol., Bologna. 4-10 Sept. 1961. p. 97-104, 4 figs. May 1962. WR 108: 6
In French with German and Italian summaries.

Heyberger, K., and P. Pinc. [CONTRIBUTION TO THE DIAGNOSIS OF LEPTOSPIROSES.] Vet. Casopis 11(2): 118-122. 1962. [From Bibliog. Agr. 26(10), 1962.] WR 108: 6
In Czech with English summary.

Popov, N. P. [HELMINTHIASIS OF FARM ANIMALS, FURBEARING ANIMALS AND BIRDS IN THE TATAR A.S.S.R. AND NEIGHBOURING REPUBLICS.] Uchenie Zapiski Kazanskogo Vet. Inst. 75: 1-275, 70 figs. 1960. [From abstr. in Helminthol. Abstr. 31 (2), 1962.] WR 108: 6
[In Russian.] The first section deals with the economic losses caused by helminths; in the second, more than a hundred diseases are discussed with reference to their geographical distribution. Brief descriptions and accounts of the biology, mode of infection, pathogenesis, symptoms, diagnosis, immunity and treatment are also given.

Sikes, R. K., and E. S. Tierkel. WILDLIFE RABIES STUDIES IN THE SOUTHEAST. U. S. Livestock Sanit. Assoc. Proc. 64: 268-272. 1960. [From Bibliog. Agr. 26 (11), 1962.] WR 108: 6

Vaccari, I., G. Ballarini, and A. Farrari. (Inst. Vet. Med. Clinic & Infectious Diseases, University, Parma, Italy.) ASPETTI ECOLOGICI SU TALUNE MALATTIE PER RAPPORTO ANIMALE-IXODOIDEA-NOXA QUALI ELEMENTI DI CONOSCENZA NELLE BIOCENOSI DELLA PROVINCIA DI PARMA. [PRELIMINARY OBSERVATIONS ON THE ECOLOGICAL ASPECTS OF SOME DISEASES BASED UPON THE ANIMAL-IXODOIDEA-NOXA RELATIONSHIPS IN THE BIOCENOSES OF THE PROVINCE OF PARMA.] Trans. 5th Congr. Intern. Union Game Biol., Bologna. 4-10 Sept. 1961. p. 223-235, 2 figs. May 1962. WR 108: 6
In Italian with German summary.

WILDLIFE--BIOMETRICS

Lambou, Victor W., and Robert J. Muncy. (La. Wild Life & Fisheries Comm., Baton Rouge.) ESTIMATING THE NUMBER OF MARKED ANIMALS WHICH HAVE RETAINED THEIR IDENTITY FROM MULTIPLE MARKED ANIMALS AND ITS APPLICATION TO THE PETERSEN METHOD. Proc. 15th Ann. Conf. SE Assoc. Game & Fish Comms. p. 161-173. 1961 [1962]. WR 108: 7

This paper presents a preliminary consideration of the problem of mark loss. Generalized formulas are given for determination of confidence limits and variance of the estimates, and are only for large sample approximations.--W. T. Van Velzen.

Young, Howard. (Wis. State Coll., LaCrosse.) A TEST FOR RANDOMNESS IN TRAPPING. Bird-Banding 32(3): 160-162. July 1961. WR 108: 7

A test is given for determining the existence of randomness in the days of initial capture of samples of banded birds. The test is useful only when there are ten or more days each on which birds are captured and not captured.

WILDLIFE--MANAGEMENT & RESEARCH, GENERAL

Frank, Harry. (Forschungsstelle für Jagdkunde & Wildschadenverhütung, Beuel-Niederholtorf, Germany.) PROBLEME DER NIEDERWILDHEGE IN DEUTSCHLAND. [SMALL-GAME MANAGEMENT IN GERMANY.] Trans. 4th Congr. Intern. Union Game Biol., Arnhem/Oosterbeek. 28 Sept.-5 Oct. 1959. p. 46-51, 2 figs. 1960. WR 108: 7

In German with English and Dutch summaries. Post-war harvests of hares, pheasants and partridges in several districts of Germany were considerably lower than pre-war harvests. The slow recovery of partridges is blamed on intensity of agriculture (less weeds, decrease of insect species by monotype cultivation, destruction of certain faunal elements by insecticides, etc.) and the lack of an effective predator control program. An incubator and heated shelter box is described which is proposed as a measure to save the brood of pheasants and partridges.--From summ.

Jones, F. K. (Fla. Game & Fresh Water Fish Comm., Tallahassee.) A PRELIMINARY REPORT ON THE USE OF INTRODUCED TROPICAL FRUIT TREES AND SHRUBS FOR WILDLIFE UTILIZATION IN SOUTH FLORIDA. Proc. 15th Ann. Conf. SE Assoc. Game & Fish Comms. p. 114-115. 1961 [1962]. WR 108: 7

In order to fill the gap created by the absence of oaks and other preferred plants the introduction of tropical trees and shrubs is being made. Nine recently introduced tropical plants are described and a general method given for their propagation.--W. T. Van Velzen.

Koskimies, Jukka. RIISTANTUTKIMUKSEMME TAVOITTEET JA TYÖALA. [THE AIMS AND SCOPE OF GAME RESEARCH.] Suomen Riista 14: 7-30, 11 figs. 1961. WR 108: 7

[In Finnish with English summary.] The ultimate aim of game research is to develop means for regulating animal numbers in natural game populations and to develop understanding for using these means for the long-term benefit of man. Much of the work involved in game research is basic population ecology. Of particular interest as regards game species is their reproductive biology. The habitat requirements of game species and particularly their adaptation to man-made landscapes deserve special attention. The effects of hunting upon game populations are not adequately known and require further study. Successful work in game research requires cooperation of specialists in ecology, ethology, physiology, parasitology and other branches of biological science.--From auth. summ.

Nicholson, E. M. (Nature Conservancy, 19 Belgrave Sq., London S. W. 1, England.) SOME RECENT DEVELOPMENTS IN WILDLIFE RESEARCH IN GREAT BRITAIN. Trans. 4th Congr. Intern. Union Game Biol., Arnhem/Oosterbeek. 28 Sept.-5 Oct. 1959. p. 207-210. 1960. WR 108: 7

In English with summaries in German and Dutch. A review of progress in research and management of the red deer, gray seal, rabbit, field vole, pine marten, red grouse, and miscellaneous birds and mammals of economic importance in Great Britain.

Toschi, A., secretary. TRANSACTIONS OF THE FIFTH CONGRESS OF THE INTERNATIONAL UNION OF GAME BIOLOGISTS. Ricerche di Zool. Appl. alla Caccia (Bologna) 4(1). 312 p., illus. May 1962. WR 108: 8

The 5th Congress met at Bologna in 1961. Papers and discussions in English, French, German, or Italian. The German papers have English summaries, and all papers have summaries in Italian in addition to one in another language of the Congress. Most of the papers included are listed individually in this issue of WR.

Ueckermann, Erhard. (Forschungsstelle für Jagdkunde & Wildschadenverhütung, Beuel-Niederholtorf, Germany.) EIN NEUER WEG FÜR DIE WIRKSAME WEITERGABE UND VERBREITUNG JAGDWISSENSCHAFTLICHER ERKENNTNISSE AN DIE PRAXIS. [A NEW METHOD TO KEEP PRACTITIONERS INFORMED ABOUT THE FINDINGS OF GAME SCIENCE.] Trans. 4th Congr. Intern. Union Game Biol., Arnhem/Oosterbeek. 28 Sept.-5 Oct. 1959. p. 201-206, 1 fig. 1960. WR 108: 8

In German with summaries in English and Dutch. The use of experimental and demonstration fields is proving more effective than the "classical method" of publishing articles in periodicals or distributing booklets in keeping sportsmen and forest administrators informed of progress and problems in wildlife management in Germany.--From summ.

U. S. Fish & Wildlife Service. WILDLIFE RESEARCH PROGRESS / 1961. F&WS, Circ. 146. iv + 50 p., illus. June 1962. WR 108: 8

This is a general report of progress in the many facets of the research program of the Branch of Research of the Bureau of Sport Fisheries and Wildlife. A list is included of 364 publications, classified according to the research center or unit represented by the authors.

Vos, A. de. (Ontario Univ., Ontario, Canada.) PROGRESS IN WILDLIFE MANAGEMENT IN CANADA. Trans. 4th Congr. Intern. Union Game Biol., Arnhem/Oosterbeek. 28 Sept.-5 Oct. 1959. p. 211-215. 1960. WR 108: 8

In English with summaries in German and Dutch. The following aspects of wildlife investigations and management are discussed briefly: legislation, game inventory, habitat evaluation, population studies of individual species, nutrition studies, management, protection of rare species, wildlife organizations, and research needs and development.

Voûte, A. D., president. TRANSACTIONS OF THE FOURTH CONGRESS OF THE INTERNATIONAL UNION OF GAME BIOLOGISTS. Inst. Biol. Field Res. (ITBON, Arnhem). 218 p., illus. 1960. WR 108: 8

The 4th Congress met at Arnhem/Oosterbeek in 1959. Papers and discussions in English, French or German. The French and German papers have English summaries, the English and French ones have summaries in German and all of them have summaries in Dutch. Most of the papers included are listed individually in this issue of WR.

WILDLIFE--HUNTING AREAS & PROBLEMS

Doltl, F. [REFLECTIONS ON THE PROBLEM OF HUNTING.] Allg. Forstztg. 73 (11/12): 144-146. June 1962. [From Bibliog. Agr. 26(11), 1962.] WR 108: 8

In German. In relation to forestry.

Bis, G. DIE STELLUNG DER JAGD IM MITTELALTERLICHEN SYSTEM DER WISSENSCHAFTEN. [THE STATUS OF HUNTING IN THE SCHOLASTIC SYSTEM OF KNOWLEDGE.] Z. Jagdwiss. 7(1): 25-28. Mar. 1961. WR 108: 8

In German with English and French summaries. According to the scholastic system, hunting was one of the 'artes mechanicae', being closely related to agriculture but differentiated from it. Medieval specialist literature on hunting is made up of translations from older and neighboring civilizations as well as original writings.

Eis, G. ALTE JÄGERKUNSTSTÜCKE AUS UNBEKANNTEN HANDSCHRIFTEN. [OLD HUNTING "RECIPES" FROM LITTLE KNOWN MANUSCRIPTS.] Z. Jagdwiss. 7(3): 126-131. Oct. 1961. WR 108: 9

In German with English and French summaries. Six short formulas are provided for hunters to use in obtaining winged game through the use of poisoned baits, attracting furred game by strongly smelling salts and scaring away game by means of a spell. The literary position of these texts (and their place in the specialized history of this subject) is determined by comparing them with other traditions.

Bule, H. W. DIE JAGDGESCHICHTE OSTFRIESLANDS. [THE HISTORY OF HUNTING IN EASTERN FRISIA.] Z. Jagdwiss. 7(2): 41-82. June 1961. WR 108: 9

In German with English and French summaries. A short description of hunting in ancient times followed by a detailed discussion of the period under the Eastern Frisia dynasty. The popularity of hunting up to the 18th century resulted from the abundance of red and fallow deer. Of historical interest is the early mentioning of rabbits in the islands of Eastern Frisia. The development of hunting jurisdiction differs from most of Germany due to the more liberal constitution of the country.

Katzenmeier, Philipp. (Sonnhalde 79, Freiburg im Breisgau, Germany.) DIE ENTWICKLUNG DES JAGDRECHTS IN WESTDEUTSCHLAND NACH DEM ZWEITEN WELTKRIEG. [THE DEVELOPMENT OF THE SHOOTING-RIGHT IN WESTERN GERMANY AFTER THE SECOND WORLD WAR.] Trans. 5th Congr. Intern. Union Game Biol., Bologna. 4-10 Sept. 1961. p. 305-311. May 1962. WR 108: 9

In German with English and Italian summaries. Game laws before the Second World War held to the principle of the French Revolution that hunting rights are inseparably connected with real estate ownership. In 1953, Federal game laws were instituted, but for legal reasons these could be used only as skeleton laws. The new Federal laws accepted shooting ground principles with consolidation possibilities and production of game with regard for forestry and agricultural interests. They stressed hunting ethics, provided for a required hunters' examination, limited kill of hoofed game to a predetermined number, and set open and closed seasons. In 1961 further amendments were made. These prohibited use of certain types of traps, protected most seals of species of Phocidae and Otaridae, protected most diving waterfowl, improved methods for control of annual kill of game, and regulated sale of game.

WILDLIFE--FOOD HABITS & TECHNIQUES

Tilgner, Damazy Jerzy. (Politechnika, Gdanska, Poland.) RICHTLINIEN ZUR QUALITÄTSBEWERTUNG VON WILDTIEREN. [DIRECTIVES FOR THE QUALITY-EVALUATION OF GAME SPECIES.] Trans. 4th Congr. Intern. Union Game Biol., Arnhem/Oosterbeek. 28 Sept.-5 Oct. 1959. p. 122-127, 1 fig. 1960. WR 108: 9

In German with English and Dutch summaries. For an objective valuation of the quality of game species the following directive is recommended: 1. Body-weight (disembowled and not) measurements of the head, the trunk and the limbs and also the color of coat or feathers; 2. Measurements of the skinned and disembowled main body-parts after cooling; 3. The weight of the body-parts mentioned; 4. Their size and form; 5. Section-measurements of the 'longissimus dorsi' behind the last rib; 6. Proportional distribution of meat (muscles), fat, and bones. It is further recommended that index-figures should be made up to save time in the quality-evaluation.

WILDLIFE--REPORTS OF ORGANIZATIONS & REPORTS OF HARVESTS

British Columbia. REPORT OF THE DEPARTMENT OF RECREATION AND CONSERVATION ...FOR THE YEAR ENDED DECEMBER 31, 1961. Queen's Printer, Victoria, B. C. 80 p., illus. 1962. WR 108: 9

Pages 13-29 are devoted to reports of the Fish and Game Branch. A summary is given of the game harvest from 1951 to 1960 and the status of game populations

is discussed. A report from the predator control division presents an outline of work done with tables showing mammalian and avian predators taken from 1959 to 1961.--W. T. Van Velzen.

Canadian Wildlife Service. RESEARCH PROGRESS REPORT -- 1961. Canadian Wildl. Serv. 48 p., illus. 1962. WR 108: 10
A pamphlet containing signed reports of wildlife research conducted during 1961. Reports are listed in the following divisions: limnology, mammalogy, ornithology, pathology and biometry. A partial list of publications appearing during 1961 is included.--W. T. Van Velzen.

Cape of Good Hope. DEPARTMENT OF NATURE CONSERVATION / REPORT NO. 17 / 1960. Provincial Admin., Cape of Good Hope, Dept. Nature Conserv., Cape Town, S. Africa. 104 p., illus. [1961.] WR 108: 10
A well-illustrated publication depicting various current problems such as law enforcement, nature conservati n and education in this area. A review of nature conservation in Poland is also included. Several articles concerning the work done by the Division of Inland Fisheries are presented as are reports from the Jonkershoek Waterfowl Station and de Hoop Wildlife Farm. A short account is given of predation control and game transport.--W. T. Van Velzen.

Cape of Good Hope. DEPARTMENT OF NATURE CONSERVATION / REPORT NO. 18 / 1961. Provincial Admin., Cape of Good Hope, Dept. Nature Conserv., Cape Town, S. Africa. 115 p., illus. [1962.] WR 108: 10
A handsomely illustrated publication presenting various reports of work done by the Division of Inland Fisheries, the Jonkershoek Waterfowl Station and de Hoop Wildlife Farm. Predator control work is discussed with emphasis placed on the use of the coyote-getter.--W. T. Van Velzen.

Kynoch Game Advisory Service. GAME ON THE FARM. Kynoch Game Advisory Serv. (Fordingbridge, Hampshire, England), Advisory Booklet no. 20. 4th edition. 42 p., illus. 1962. WR 108: 10
An edition of the booklet, Game and the Farmer, first published in 1956 and revised in 1958 (see WR 93: 29). This new edition basically contains the same information as the 1958 revised edition.--W. T. Van Velzen.

Maryland Commission on Research and Education. FINAL REPORT. Md. Comm. Res. & Educ. 21 p. 31 May 1961. WR 108: 10
A list of approximately 215 publications by the Chesapeake Biological Laboratory and Maryland Department of Resources and Education. Papers cover mainly fisheries subjects but many wildlife papers are included.--W. T. Van Velzen.

Middlemiss, Ernest. [9TH ANNUAL REPORT ON THE RONDEVLEI BIRD SANCTUARY AND THE CAPE OF GOOD HOPE NATURE RESERVE.] Divisional Council Cape of Good Hope. 138 p. 1960. WR 108: 10
This volume contains: a list of 169 bird species recorded since 1952 in the Rondevlei sanctuary; a report on 19,654 birds banded since 1952 with a species analysis for 1960; a list of 51 banding recoveries; a list of the more obvious terrestrial mammals of the reserve; and a preliminary list of the birds of the Cape of Good Hope Nature Reserve. A broad floral account of the Rondevlei bird sanctuary is accompanied by a taxonomic list of plants identified.--W. T. Van Velzen.

Natal. THIRTEENTH [ANNUAL] REPORT OF THE NATAL PARKS, GAME AND FISH PRESERVATION BOARD FOR THE PERIOD 1ST APRIL, 1960 TO 31ST MARCH, 1961. 35 p., illus. 1962. WR 108: 10
A collection of reports from the Umfolozi, Ndumu and Mkuzi game preserves and other nature reserves. Field officers' notes of general interest are included as are several photographs of African game animals.--W. T. Van Velzen.

Ferrigno, F. (N. J. Div. Fish & Game, Trenton 7.) VARIATIONS IN MOSQUITO-WILDLIFE ASSOCIATIONS ON COASTAL MARSHES. Proc. 40th Ann. Meeting N. J. Mosquito Extermination Assoc. p. 193-203, 4 figs. + 1 photo. 1961. WR 108: 11

Some of the many variations that can occur in regard to mosquito production, wildlife utilization and mosquito control are discussed. The most effective, less expensive, and less injurious control for a given marsh must be determined by a survey of that particular marsh.--Author.

Hoffpauir, Clark M. (La. Wild Life & Fisheries Comm., Baton Rouge.) METHODS OF MEASURING AND DETERMINING THE EFFECTS OF MARSH FIRES. Proc. 15th Ann. Conf. SE Assoc. Game & Fish Comms. p. 142-161, 10 figs. 1961 [1962]. WR 108: 11

This study was designed as a pilot type problem on marsh burning to devise methods of measuring marsh fires and of evaluating them; to measure factors influencing marsh burns; and to measure some of the effects of marsh burns.--From auth. summ.

Springer, Paul F. (Patuxent Wildl. Res. Center, Laurel, Md.) RELATIONSHIP OF MOSQUITO CONTROL TO CONSERVATION. Proc. 29th Ann. Conf. Calif. Mosquito Control Assoc., Inc. p. 83-85, 15 Sept. 1961. WR 108: 11

A discussion giving a general analysis of the problems associated with mosquito control and wildlife conservation. Points of agreement between the two are mentioned and future study is suggested to learn more about the biology of mosquitoes and appraise the effects of control measures on the whole environment.--W. T. Van Velzen.

Springer, Paul F., Robert L. Vannote, and Frank Kovach, editors. COORDINATION OF MOSQUITO CONTROL AND WILDLIFE MANAGEMENT. Morris County Mosquito Extermination Comm. (Morris Plains, N. J.). 154 p. 1960. Price $2.00. WR 108: 11

A symposium of papers grouped into the following categories: fundamentals of mosquito biology and control, fundamentals of wetland wildlife and fish management, methods of chemical mosquito control and effects on fish and wildlife, and water management for mosquito control and wildlife management.--W. T. Van Velzen.

Tindall, Edward E. (Delaware Agr. Expt. Sta., Newark.) A TWO-YEAR STUDY OF MOSQUITO BREEDING AND WILDLIFE USAGE IN THE LITTLE CREEK IMPOUNDED SALT MARSH, LITTLE CREEK WILDLIFE AREA, DELAWARE, 1959-60. Proc. 48th Ann. Meeting N. J. Mosquito Extermination Assoc. p. 100-105. 1961. WR 108: 11

Impounding effectively eliminated the breeding of Aedes sollicitans. Indications were that proper water level management will reduce the breeding of Culex salinarius, Anopheles bradleyi, and Unanotaenia sapphirina. A change was noted in increased species, numbers, and utilization as a breeding, resting and feeding area for wildfowl after impounding. Muskrat populations also increased.--From auth. summ.

U. S. Fish & Wildlife Service. YOUR STAKE IN WETLANDS. F&WS Circ. 140. 11 p., illus. 1962. WR 108: 11

"Wetlands are a part of our national resource estate. They are important to the hunter, the fisherman, the photographer, all of us--for sport, hobby, relaxation, and as a place just to get out of doors." The role of wetlands in providing human recreation and wildlife habitat is presented by a series of black-and-white photographs.

FARMLAND & WILDLIFE

Bruna, Joe F. (Ky. Dept. Fish & Wildl. Resources, Frankfort.) A SUMMARY OF AGRICULTURAL CONSERVATION PROGRAM PRACTICES IN KENTUCKY AS THEY AFFECT LAND USE RELATING TO WILDLIFE. Proc. 15th Ann. Conf. SE Assoc. Game & Fish Comms. p. 81-87. 1961 [1962]. WR 108: 12

The Agricultural Conservation Program is discussed with special reference to the following points: practices as they relate to wildlife; intra Agricultural Conservation Program conflicts; practices with benefits primarily to wildlife; and the 1961 feed grain program.--W. T. Van Velzen.

Eickhoff, Wilhelm. (Pathol. Inst., Duisberg, Germany.) UEBER GEWICHTE UND GEWICHTSVERCHIEBUNGEN BEI KANINCHEN, HASEN UND FASANEN DER FREIEN WILDBAHN. [ON THE WEIGHT AND ON WEIGHT VARIATIONS IN RABBITS, FIELD HARES AND GAME PHEASANTS IN NATURE.] Trans. 5th Congr. Intern. Union Game Biol., Bologna. 4-10 Sept. 1961. p. 175-185, 4 figs. May 1962. WR 108: 12

In German with English and Italian summaries. Monthly variations are noted for rabbits, hares, and pheasants during the hunting season. With young animals this is considered normal growth; but with adults this is physiological and dependent upon the season.--From summ.

RANGELAND & WILDLIFE

Handy, Hubert, and James Scharnagel. (N. C. State Coll., Raleigh.) GROWTH AND USAGE OF PERMANENT FORAGE BY DEER AND TURKEYS. Proc. 15th Ann. Conf. SE Assoc. Game & Fish Comms. p. 24-26. 1961 [1962]. WR 108: 12

Samples were taken from 20 sq. ft. exclosures and compared with samples from grazed areas. It was found that 816.7 pounds of food was utilized per acre. A large amount of food was available in the grazed area at the end of the study period. It is thus suggested that utilization is primarily made of new growth as it becomes available.--W. T. Van Velzen.

Smith, D. R. COMPETITION BETWEEN CATTLE AND GAME ON ELK WINTER RANGE. Wyo. Agr. Expt. Sta. Bull. 377. 16 p., map. Mar. 1961. [From Bibliog. Agr. 26 (10), 1962.] WR 108: 12

FORESTLAND--FORESTRY & ECOLOGY

Halls, Lowell K., and Thomas H. Ripley, editors. (Southern Forest Expt. Sta., New Orleans, La.) DEER BROWSE PLANTS OF SOUTHERN FORESTS. U. S. Forest Serv., South & SE Forest Expt. Sta. 78 p., illus. 1961. WR 108: 12

An illustrated list of the most widely distributed plants utilized by deer. Plant descriptions include information as to where species are found, normal growth habit, seasonal preferences by deer, parts taken and tolerance to browsing. Use by other forms of wildlife is also included for most plants.--W. T. Van Velzen.

FORESTLAND--MANAGEMENT FOR & DAMAGE BY WILDLIFE

Bashenina, N. V. [HARMFUL AND USEFUL MAMMALS OF THE CHESTNUT SOIL ZONE OF THE VOLGA AREA.] Polezashch. Lesorazved. na Kashtanovykh Poch. 1: 187-223. 1961. [From Bibliog. Agr. 26(11), 1962.] WR 108: 12

In Russian. Rodents in forests; includes control.

Ender, R. [THE GAME PROBLEM IN MODERN FORESTRY.] Förderungsdienst 9(10): 325-332. Oct. 1961. [From Bibliog. Agr. 26(11), 1962.] WR 108: 12

In German. Damage in Austria.

Heard, Louie Peaster. EFFECT OF DEER AND CATTLE BROWSING ON COMMERCIAL HARDWOOD REPRODUCTION IN NORTHEAST LOUISIANA. M.S. thesis, La. State Univ. 1961. [Osborn and others. Forest Sci. 8(3), 1962.] WR 108: 12

Holdampf, Gy. [ON WILDLIFE DAMAGES.] Erdö 11(6): 267-272. June 1962. [From Bibliog. Agr. 26(11), 1962.] WR 108: 13
In Hungarian.

Mantel, W. [SIMPLIFIED INFORMATION ON BROWSING AND PEELING DAMAGES.] Allg. Forstz. 17(28): 420-421. July 1962. [From Bibliog. Agr. 26(10), 1962.] WR 108: 13
In German.

Neubacher, F. [ARE FENCED IN FOREST PLOTS SUCCESSFUL IN PROTECTION AGAINST WILDLIFE DAMAGES IN MOUNTAIN FORESTS?] Allg. Forstztg. 73(13/14): 170-171. July 1962. [From Bibliog. Agr. 26(11), 1962.] WR 108: 13
In German.

Sullivan, Edward G., and W. C. Young. (SCS, Grenada, Miss.) AN EXOTIC OAK, QUERCUS ACUTISSIMA, FOR WILDLIFE FOOD PLANTING. Proc. 15th Ann. Conf. SE Assoc. Game & Fish Comms. p. 136-141. 1961 [1962]. WR 108: 13
The introduced sawtooth oak has a high potential as a superior acorn producer for wildlife. Acorn crops are abundant and regular and apparently resistant to decay and insect damage.--From auth. summ.

Van Deusen, James L., and Clifford A. Myers. (Rocky Mt. Forest & Range Expt. Sta., Fort Collins, Colo.) PORCUPINE DAMAGE IN IMMATURE STANDS OF PONDEROSA PINE IN THE BLACK HILLS. J. Forestry 60(11): 811-813, 2 figs. Nov. 1962. WR 108: 13
Fifty-six sample plots were examined for porcupine damage. Nearly 10% had been damaged with thriftiest trees most heavily attacked. Damage was permanent to 75% of the trees attacked with spike-top, crown scars and crook the most common types of damage. Porcupines were most active within 2 chains of openings one acre or larger, attacking a higher percentage of trees on lower and upper slopes.--From auth. summ.

STRIPPED LAND & MISCELLANEOUS HABITATS

van Haaften, J. L. (Inst. Biol. Field Res., Arnhem, Netherlands.) THE SETTLEMENT OF UPLAND GAME POPULATION IN NEW RECENTLY RECLAIMED POLDER-LAND. Trans. 5th Congr. Intern. Union Game Biol., Bologna. 4-10 Sept. 1961. p. 249-260, 2 figs. May 1962. WR 108: 13
In English with French and Italian summaries. Plant succession is described. In one polder (Noordoostpolder) about one-third of all species of the Dutch flora were represented 12 years after reclamation. Notes are given for the relative abundance of game species (hare, rabbit, pheasant, partridge, and roe deer) found on the Noordoostpolder and the Oostelijk Flevoland which became dry in 1942 and 1957 respectively.

CONTROL OF VEGETATION WITH HERBICIDES, ETC.

Arata, Andrew A. EFFECTS OF BURNING ON VEGETATION AND RODENT POPULATIONS IN A LONGLEAF PINE TURKEY OAK ASSOCIATION IN NORTH CENTRAL FLORIDA. Quart. J. Fla. Acad. Sci. 22(2): 94-104. 10 Nov. 1959. [From J. Mammal. 43(3), 1962.] WR 108: 13

Harlow, Richard F., and Paul Bielling. (Fla. Game & Fish Comm., Tallahassee.) CONTROLLED BURNING STUDIES IN LONGLEAF PINE-TURKEY OAK ASSOCIATION ON THE OCALA NATIONAL FOREST. Proc. 15th Ann. Conf. SE Assoc. Game & Fish Comms. p. 9-24, 1 fig. 1961 [1962]. WR 108: 13
Studies of changes in seasonal plant growth, species composition, utilization by deer, and food production were conducted, using the 100% clipping method, on 1-, 2-, 3- and 4-year-old burns and controlled burning in the same area 3 years in succession. The 1-year burn contained greater quantities and numbers of

different plant species during spring, fall and winter. The annually burned area supported approximately the same number of different species but the quantities were less. Degree of utilization was heaviest in the 1- and 2-year old burns and in the area burned 3 years in succession. The most beneficial burning program is a 3-year rotation which maintains forbs and legumes at their highest levels of production.--From auth. summ.

Madison, Robert W., and Robert H. Ruth. (Pacific NW Forest & Range Expt. Sta., Portland, Oreg.) BASAL SPRAYING OF RED ALDER. Weeds 10(4): 324-325, 1 fig. Oct. 1962. WR 108: 14

Abstract: Red alder (Alnus rubra Bong.) was readily killed by growing season treatments with a 1 to 1 mixture of 2,4-dichlorophenoxyacetic acid (2,4-D) and 2,4,5-trichlorophenoxyacetic acid (2,4,5-T) in diesel oil. Except for 1-inch-diameter trees, it was resistant to dormant season treatments. Treatments applied during moderate rain were less effective than during rain-free periods.

Schubert, Gilbert H. CHEMICALS FOR BRUSH CONTROL IN CALIFORNIA REFOREST-ATION. Pacific NW Forest & Range Expt. Sta., Misc. Pap. no. 73. 14 p. 1962. WR 108: 14

Abstract: This report summarizes findings from experimental trials with selective herbicides applied to forest shrubs and trees in California and adjacent regions. It also recommends formulations and amounts to apply to various species.

Surber, Eugene W. (Bureau Sport Fisheries & Wildl., Atlanta, Ga.) IM-PROVING SPORT FISHING BY CONTROL OF AQUATIC WEEDS. F&WS Circ. 128. iv + 37 p., 9 figs. 1961. WR 108: 14

A leaflet designed as a guide to be used to abate weed problems in farm ponds, hatchery ponds, and small lakes. Control methods are given for the following groups: pond scums and other algae, water-bloom algae, emergent and floating-leafed plants and submerged aquatic plants.--W. T. Van Velzen.

Ward, C. J. REPORT ON SCRUB CONTROL IN THE HLUHLUWE GAME RESERVE. Lammergeyer 2(1): 57-62. Feb. 1962. WR 108: 14

In an attempt to maintain a favorable balance between scrub type vegetation and grasslands, on an economical basis, the effective use of fire has been experimented with and an evaluation made. Secondary measures consisting of cutting and application of 2,4,5-T also proved successful in special situations. Proposed methods have been carried out over considerable areas as well as on an experimental plot basis.--W. T. Van Velzen.

MAMMALS--GENERAL

Kavanau, J. Lee. (Univ. Calif., Los Angeles 24.) PRECISE MONITORING OF DRINKING BEHAVIOR IN SMALL MAMMALS. J. Mammal. 43(3): 345-351, 3 figs. Aug. 1962. WR 108: 14

Abstract: A method is described whereby the time of beginning and ending of each drink taken by captive mammals is recorded to the split-second. Used in conjunction with other automatic monitoring techniques, detailed profiles of activity can be built up, including auto-correlations of drinking and cross-correlations with other activities. Representative data for a mature Peromyscus maniculatus female show that drinking follows a specific pattern correlating with time of day and concurrent activities.

Manville, Richard H. (US F&WS, Washington, D. C.) SPECIALIZED MAMMALIAN TERMINOLOGY. Turtox News 40(10): 242-247. Oct. 1962. WR 108: 14

This paper presents a summary of vernacular names gathered over the years in an attempt to provide a measure of standardization. Juveniles, neuters, and hybrids are briefly discussed and examples given of names for several crosses. A table lists the major mammalian orders with terms for adult ♂♂, ♀♀, juveniles, and groups.--W. T. Van Velzen.

Mossman, Archie S., and B. G. R. Reynolds. (Humboldt State Coll., Arcata, Calif.) SOME AFRICAN TECHNIQUES FOR CAPTURING MAMMALS. J. Mammal. 43(3): 419-420, 1 fig. Aug. 1962. WR 108: 15

A constricting cone trap and a bag net for placement in runways to catch mammals up to cane rat size and a spring-pole foot snare for capturing animals up to the size of elk are discussed and illustrated.--W. T. Van Velzen.

Sokolov, W. (Univ. Moscow, USSR.) ADAPTATIONS OF THE MAMMALIAN SKIN TO THE AQUATIC MODE OF LIFE. Nature 195(4840): 464-466. 4 August 1962. WR 108: 15

Aquatic animals are classified into two groups: 1) semi-aquatic forms, with a dense pelage, and 2) forms more adapted to life in water, or even purely aquatic ones, with well-developed subcutaneous fat tissue and a pelage at different stages of reduction or devoid of hairs. The various functions of pelage and subcutaneous fat tissue are described in detail with many specific examples pointed out.--W. T. Van Velzen.

Stains, Howard J., and Larry Calvert. (Southern Ill. Univ., Carbondale.) UNUSUAL DEATH OF SMALL MAMMALS. J. Mammal. 43(3): 422. Aug. 1962. WR 108: 15

On 16 May 1962, two weeks after a period of heavy rain and high water, 15 Pitymys pinetorum, 1 Microtus ochrogaster and 1 Blarina brevicauda were picked up dead at the base of an 80-100' sandstone bluff. The area was an open hardwood bottomland and not the usual habitat for pine voles.--W. T. Van Velzen.

Talbot, Lee M. PRELIMINARY FINDINGS OF THE POPULATION DYNAMICS OF THE WILDEBEEST IN NAROK DISTRICT, KENYA. In: CONFERENCE ON LAND MANAGEMENT PROBLEMS IN AREAS CONTAINING GAME: LAKE MANYARA, TANGANYIKA, 20TH-22ND FEBRUARY, 1961. East African Agr. & Forestry J. 27(1): 45-46. 1961. [From Biol. Abstr. 38 (3), 1962.] WR 108: 15

Talbot, Lee M., H. P. Ledger, and W. J. A. Payne. THE POSSIBILITY OF USING WILD ANIMALS FOR ANIMAL PRODUCTION ON EAST AFRICAN RANGELAND. In: CONFERENCE ON LAND MANAGEMENT PROBLEMS IN AREA CONTAINING GAME: LAKE MANYARA, TANGANYIKA, 20TH-22ND FEBRUARY, 1961. East African Agr. & Forestry J. 27(1): 43. 1961. [From Biol. Abstr. 38(3), 1962.] WR 108: 15

Talbot, Lee M., and J. S. G. McCulloch. A METHOD FOR DETERMINING WEIGHT OF WILD ANIMALS FROM EXTERNAL BODY MEASUREMENTS. In: CONFERENCE ON LAND MANAGEMENT PROBLEMS IN AREAS CONTAINING GAME: LAKE MANYARA, TANGANYIKA, 20TH-22ND FEBRUARY, 1961. East African Agr. & Forestry J. 27(1): 45. 1961. [From Biol. Abstr. 38 (3), 1962.] WR 108: 15

Talbot, Lee M., and Martha H. Talbot. PRELIMINARY RESULTS ON DETERMINATION OF FOODS EATEN BY SOME EAST AFRICAN WILD UNGULATES. In: CONFERENCE ON LAND MANAGEMENT PROBLEMS IN AREAS CONTAINING GAME: LAKE MANYARA, TANGANYIKA, 20TH-22ND FEBRUARY, 1961. East African Agr. & Forestry J. 27(1): 41-42. 1961. [From Biol. Abstr. 38(3), 1962.] WR 108: 15

Talbot, Lee M., and Martha H. Talbot. A REVIEW OF THE CURRENT POSITION OF FIELD IMMOBILIZATION IN EAST AFRICA. In: CONFERENCE ON LAND MANAGEMENT PROBLEMS IN AREAS CONTAINING GAME: LAKE MANYARA, TANGANYIKA, 20TH-22ND FEBRUARY, 1961. East African Agr. & Forestry J. 27(1): 42. 1961. [From Biol. Abstr. 38(3), 1962.] WR 108: 15

Talbot, Lee M., and D. R. P. Zaphiro. AERIAL ANALYSIS OF WILDLIFE POPULATION STRUCTURES. In: CONFERENCE ON LAND MANAGEMENT PROBLEMS IN AREAS CONTAINING GAME: LAKE MANYARA, TANGANYIKA, 20TH-22ND FEBRUARY, 1961. East African Agr. & Forestry J. 27(1): 42-43. 1961. [From Biol. Abstr. 38(3), 1962.] WR 108: 15

Yurgenson, P. B., editor. STUDIES OF MAMMALS IN GOVERNMENT PRESERVES. Ministry Agr., USSR (Moscow). v + 224 p. 1956 [1961]. Published for the National Science Foundation and the Department of the Interior by the Israel Program for Scientific Translations. [Available from the Office of Technical Services, U. S. Dept. Commerce, Washington 25, D. C. Price $2.25.] WR 108: 16

Translated from the Russian. A collection of papers on the ecology of sables, martens and spotted deer, the ecological traits of badger, the distribution of river beaver and censusing methods for white hares.

MAMMALS--FAUNAS AND MANUALS

Cabrera, Angel. CATALOGO DE LOS MAMÍFEROS DE AMÉRICA DEL SUR. II. (SIRENIA-PERISSODACTYLA-ARTIODACTYLA-LAGOMORPHA-RODENTIA-CETACEA). [CATALOG OF THE MAMMALS OF SOUTH AMERICA. II. (SIRENIA-PERISSODACTYLA-ARTIODACTYLA-LAGOMORPHA-RODENTIA-CETACEA).] Rev. Mus. Argentino Cienc. Nat. "Bernardino Rivadavia," Buenos Aires, Cienc. Zool. 4(2). xxii + p. 309-732. 1960 (1961). [From J. Mammal. 43(3), 1962.] WR 108: 16

[In Spanish.]

Jones, J. Knox, Jr., Ticul Alvarez, and M. Raymond Lee. (Univ. Kans., Lawrence.) NOTEWORTHY MAMMALS FROM SINALOA, MEXICO. Univ. Kans. Museum Nat. Hist. Publ. 14(12): 145-159, 1 fig. 18 May 1962. WR 108: 16

A report on 20 spp. of mammals representing significant range extensions is of especial taxonomic or zoogeographic interest or complement published information.--W. T. Van Velzen.

Novikov, G. A. FAUNA OF THE USSR / CARNIVOROUS MAMMALS. Acad. Sci., USSR (Moscow-Leningrad) no. 62. iii + 284 p., 191 figs. 1956 [1962]. Published for the National Science Foundation and the Smithsonian Institution by the Israel Program for Scientific Translations. [Available from the Office of Technical Services, U. S. Dept. Commerce, Washington 25, D. C. Price $3.00.] WR 108: 16

Translated from the Russian. A brief description of the order Carnivora is followed by a detailed discussion of the geographical distribution, ecology and economic importance of the group. Skull structure and dentition and their modification with age are explained. The families Canidae, Ursidae, Hyaenidae, Procyonidae, Mustelidae and Felidae are treated separately. Generic and specific keys are given and much information is included on the morphology and ecology of each species. The text is accompanied by numerous photographs and black-and-white illustrations.--W. T. Van Velzen.

Tamsitt, James R. (Univ. Andes, Bogotá, Colombia.) MAMMALS OF THE DELTA MARSH REGION OF LAKE MANITOBA, CANADA. Canadian Field-Nat. 76(2): 71-78. Apr.-June 1962. WR 108: 16

A list of 33 species of mammals known to occur or to have occurred recently in the Delta Marsh Region. Species for which no definite information is available have not been included.--W. T. Van Velzen.

MAMMALS--POPULATIONS, HOME RANGES, COMMUNITIES

Brown, L. E. (Imperial Coll., London, England.) HOME RANGE IN SMALL MAMMAL COMMUNITIES. Surv. Biol. Progr. 4: 131-179. 1962. [From long abstr. in Biol. Abstr. 40(1), 1962.] WR 108: 16

Limitations of trapping for studying small mammal populations are discussed.

Dasmann, Raymond F., and Archie S. Mossman. (Univ. Calif., Berkeley.) POPULATION STUDIES OF IMPALA IN SOUTHERN RHODESIA. J. Mammal. 43(3): 375-395, 12 figs. Aug. 1962. WR 108: 17

The highest numbers of impala (Aepyceros melampus) have been found in areas rated as poor cattle range, with densities comparable to North American deer. This range is shared with as many as 16 species of ungulates. Impala breed during the early part of the wet season at two years of age and produce single young. The population, comprised of 25% yearlings, has a shortage of young adults and a high percentage of older animals. Impala herds occupy relatively small home ranges where the distribution of food, cover and water permits. Information on seasonal changes in social grouping is presented.--From auth. abstr.

Johanningsmeier, Arthur G., and Clarence J. Goodnight. (Purdue Univ., Lafayette, Indiana.) USE OF IODINE-131 TO MEASURE MOVEMENTS OF SMALL ANIMALS. Science 138(3537): 147-148, 1 fig. 12 Oct. 1962. WR 108: 17

Abstract: A technique utilizing iodine-131 was developed to study the movements of Microtus pennsylvanicus in the field. Iodine-131 (1/2 mc) was placed in a polyethylene capsule and inserted beneath the animal's skin. Movements of the animal were then followed for periods of up to 2 weeks by means of a Geiger-Müller counter attached to an aluminum pole.

Tanaka, Ryo. (Kochi Women's Univ., Kochi, Japan.) A FIELD STUDY OF EFFECT OF TRAP SPACING UPON ESTIMATES OF RANGES AND POPULATIONS IN SMALL MAMMALS BY MEANS OF A LATIN SQUARE ARRANGEMENT OF QUADRATS. Bull. Kochi Women's Univ. 9 (5): 8-16, 4 figs. Mar. 1961. WR 108: 17

The true home range of a vole can be estimated from the observed range length. The home range remained invariable when estimated from the range length, but there was a gradual increase in range size, as distance between traps was increased from 5 meters to 15 meters when the boundary strip method was used. Using customary trapping methods with trap spacing of 10 meters, the whole trappable population can probably be estimated in ordinary population densities. Closer spacing of traps is needed for denser populations. The trappable population may be different from the actual population.

MAMMALS--PARASITES AND DISEASES

Britov, V. A. [TRICHINELLIASIS IN WILD ANIMALS AND DOGS IN THE MORDOVINIAN A.S.S.R.] Uchenie Zapiski Kazanskogo Vet. Inst. 79: 225-226. 1960. [From abstr. in Helminthol. Abstr. 31(2), 1962.] WR 108: 17

[In Russian.] Trichinelliasis was found in all three wolves, three of 76 dogs and one of 19 foxes examined in Mordovinian ASSR; five polecats were not infected.

Burgdorfer, Willy, Verne F. Newhouse, Edgar G. Pickens and David B. Lackman. (PHS, Rocky Mountain Lab., Hamilton, Mont.) ECOLOGY OF ROCKY MOUNTAIN SPOTTED FEVER IN WESTERN MONTANA / I. ISOLATION OF RICKETTSIA RICKETTSII FROM WILD MAMMALS. Am. J. Hyg. 76(3): 293-301. Nov. 1962. WR 108: 17

Complement-fixing antibodies were detected in 23 (69.6%) of 33 golden-mantled ground squirrels, 5 (71.4%) of 7 chipmunks, 6 (46.1%) of 13 Columbian ground squirrels and 24 (43.6%) of 55 snowshoe hares. No evidence of previous spotted fever infection was noted in sera of 17 woodrats.

Lavrova, M. Ya. [ON THE ROLE PLAYED BY RODENTS IN THE NIDI OF LEPTOSPIROSIS IN THE LOWER COURSE OF THE RIVER KUBAN. (ON THE PROBLEM OF INTERRELATION BETWEEN THE RODENTS AND FARM ANIMALS AS THE SOURCES OF LEPTOSPIROSIS INFECTIONS).] Zool. Zhur. 41(7): 1067-1074. July 1962. [From Bibliog. Agr. 26(10), 1962.] WR 108: 17

In Russian with English summary.

Marchette, Nyven J., D. L. Lundgren, P. S. Nicholes, J. B. Bushman, and Dean Vest. STUDIES ON INFECTIOUS DISEASES IN WILD ANIMALS IN UTAH. II. SUSCEPTIBILITY OF WILD MAMMALS TO EXPERIMENTAL PLAGUE. Zoonoses Res. 1(13): 225-249. 20 Sept. 1962. WR 108: 18

A total of 1,225 wild rodents of 17 species were inoculated subcutaneously with saline suspensions containing Pasteurella pestis to determine susceptibility to plague infection. Twelve species were lethally susceptible, 3 species were resistant and 2 species were refractory to experimental plague. Comparison of susceptibility studies indicates that the susceptibility to plague of a given species of rodent varies from one area to another.--From auth. summ.

Mettrick, D. F. (Univ. Coll. Rhodesia & Nyasaland, Salisbury, Southern Rhodesia.) TAENIA MADAGASCARIENSIS DAVAINE, 1870, A CESTODE PARASITE OF MAN, RODENTS AND OTHER AFRICAN MAMMALS. Central African J. Med. 7(3): 83-84. 1961. [From Helminthol. Abstr. 30(4), 1961.] WR 108: 18

Several species of Raillietina have been identified in rodents in Rhodesia. Mettrick sees no reason why human infections with Raillietina sp. and Inermicapsifer madagascariensis could not occur in the Federation.

Rausch, R. NOTES ON THE OCCURRENCE OF CAPILLARIA HEPATICA (BANCROFT, 1893). Proc. Helminthol. Soc. Washington 28(1): 17-18. 1961. [From Helminthol. Abstr. 31(1), 1962.] WR 108: 18

Rausch reports Capillaria hepatica causing extensive liver cirrhosis in Thomomys talpoides tenellus, Neotoma cinerea fusca, Peromyscus maniculatus ? macrorhinus and Lemmus sibiricus harroldi. Since the infected L. sibiricus harroldi were collected from Nunivak Island, Alaska, C. hepatica must now be regarded as a member of the arctic fauna: C. hepatica has not previously been reported above about latitude 55°N.

Rodonaya, T. E., and G. P. Enukidze. [TRICHINELLIASIS IN WILD MAMMALS IN GEORGIA.] Soobshcheniya Akad. Nauk Gruzinskoi SSR 22(3): 351-353. 1959. [Listed in Helminthol. Abstr. 31(2), 1962.] WR 108: 18

[In Russian.]

Rosicky, B., and V. Cerny. SMALL CENTRAL-EUROPEAN MAMMALS AS HOSTS OF THE TICK IXODES RICINUS L. Zool. a Entomol. Listy 1: 37-46. 1954. Photocopies of 15 p. transl. [1962] may be ordered from the Natl. Agr. Library, USDA, Washington 25, D. C. [From Bibliog. Agr. 26(11), 1962.] WR 108: 18

van der Hoeden, J., and Esther Szanberg. INFECTIONS WITH LEPTOSPIRA MINI SZWAJIZAK IN MAN AND ANIMALS IN ISRAEL. Zoonoses Res. 1(14): 251-276. 20 Sept. 1962. WR 108: 18

A report on the occurrence of Leptospira mini in humans. The serotype was repeatedly isolated from Erinaceus europaeus, Rattus rattus, and Mus musculus. Serologic, bacteriologic, clinical and epidemiologic aspects are discussed.--From auth. summ.

SHREWS, MOLES, BATS

Davis, Wayne H., and Russell E. Mumford. (Middlebury Coll., Middlebury, Vt.) ECOLOGICAL NOTES ON THE BAT PIPISTRELLUS SUBFLAVUS. Am. Midland Nat. 68 (2): 394-398. Oct. 1962. WR 108: 18

Pipistrellus subflavus prefers watercourses at forest edges. Myotis lucifugus and Pipistrellus are rarely found feeding together, but Lasiurus borealis and Eptesicus fuscus commonly feed with pipistrelles.--From auth. abstr.

Djulić, Béatrice. CONTRIBUTION À L'ÉTUDE DE LA RÉPARTITION ET DE L'ÉCOLOGIE DE QUELQUES CHAUVES-SOURIS CAVERNICOLES DE DALMATIE. [A CONTRIBUTION TO THE STUDY OF THE DISTRIBUTION AND ECOLOGY OF BAT CAVES IN DALMATIA.] Mammalia 25 (3): 287-313. Sept. 1961. [From J. Mammal. 43(3), 1962.] WR 108: 19
[In French.]

Haeck, J. EEN VAL VOOR HET LEVEND VANGEN VAN MOLLEN. [A LIVE-TRAP FOR CAPTURING MOLES.] Lutra (Leiden) 3(2): 23-25, illus. Sept. 1961. [From J. Mammal. 43(3), 1962.] WR 108: 19
In Dutch with English summary.

Sorensen, M. W. (Univ. Utah, Salt Lake City.) SOME ASPECTS OF WATER SHREW BEHAVIOR. Am. Midland Nat. 68(2): 445-462. Oct. 1962. WR 108: 19
Water shrews were kept in an enclosure simulating a natural habitat. A 1.5-hour activity rhythm (with 0.5 hour of activity and 1 hour of inactivity) was indicated. There were two major peaks of activity within a day (4:00-5:00 A.M. and 7:00-11:00 P.M.). Sensory abilities, tunneling, nesting, and interspecies and intraspecies behavior were noted.

Wallin, Lars. TERRITORIALISM ON THE HUNTING GROUND OF MYOTIS DAUBENTONI. Säugetierk. Mitteil. 9(4): 156-159. 1 Oct. 1961. [From J. Mammal. 43(3), 1962.] WR 108: 19

RABBITS AND PIKAS

Alkon, Philip U. (N. Y. State Conserv. Dept., Delmar.) RED SQUIRREL PREDATION ON A NESTLING COTTONTAIL. N. Y. Fish & Game J. 9(2): 142. July 1962. WR 108: 19
A note relating an incident in which a nestling cottontail was killed and partially eaten by a red squirrel.

Bassini, Ettore. (Lab. Zool. Appl. alla Caccia, Bologna, Italy.) VERMINOSE BRONCHO-PULMONAIRE, INTESTINALE ET COCCIDIOSE CHEZ DES LEPUS EUROPAEUS PALL. [VERMINOUS BRONCHO-PNEUMONIA, INTESTINAL HELMINTHIASIS AND COCCIDIOSIS IN LEPUS EUROPAEUS PALL.] Trans. 5th Congr. Intern. Union Game Biol., Bologna, 4-10 Sept. 1961. p. 105-111, 3 figs. May 1962. WR 108: 19
In French with German and Italian summaries.

Boccadoro, B., and G. Veneroni. [STUDY OF PATHOGENESIS OF INFECTION WITH "SALMONELLA DUBLIN" TESTED ON RABBITS, BY THE RADIOACTIVE INDICATOR METHOD.] Arch. Vet. Italiano 13(2): 127-146. Apr. 1962. [From Bibliog. Agr. 26(10), 1962.] WR 108: 19
In Italian with English summary.

Corder, Edward Lawrence, Jr. FOOD HABITS OF THE COTTONTAIL RABBIT IN SOUTHERN ILLINOIS. M.A. thesis, Southern Ill. Univ. 38 p., 4 figs. June 1955. WR 108: 19
An evaluation of food items utilized, seasonal variation in food utilization and items utilized in relation to land use. Investigations were conducted on two study areas during Jan.-Dec. 1962. Food habits were determined by histological analyses of fecal pellets. Corn, wheat, apple, broom sedge, soybean and Kentucky bluegrass were important foods during various months. Food plants totalling 15 spp., were identified by histological procedures.--From auth. summ.

Dyce, A. L. TRANSMISSION OF MYXOMATOSIS ON THE SPINES OF THISTLES, CIRSIUM VULGARE (SAVI) TEN. C.S.I.R.O. Wildl. Res. 6(1): 88-90. 1961. WR 108: 19

Huber, James Joseph. THE TRAPPABILITY OF COTTONTAIL RABBITS AND ITS EFFECT ON THE CENSUSING OF COTTONTAIL RABBIT POPULATIONS. M.S. thesis, Ohio State Univ. vii + 126 p., 16 figs. 1959. WR 108: 20

During this study three population densities (1, 2 and 4 animals per acre) were subjected to live-trapping. Trapping success was found to be affected by population density, trap density, length of trapping period, location of traps, vegetative cover, rainfall, snow cover, wind season, and the age and sex of the individual. Suggestions are given for the improvement of live-trapping methods for the censusing of cottontails.

Jaksic, Bogdan L. (Katanicera ul. 11, Beograd, Jugoslavia.) WEITERE UNTERSUCHUNGEN DER LUNGENSTRONGYLOSE DES FELDHASEN. [FURTHER INVESTIGATIONS ON LUNG STRONGYLOSIS IN WILD HARES.] Trans. 5th Congr. Intern. Union Game Biol., Bologna, 4-10 Sept. 1961. p. 83-86. May 1962. WR 108: 20

In German with English and Italian summaries. This disease in "wild hares was exclusively maintained in sandy fields, i.e., where there are conditions for the maintenance of [the] intermediary host, which in this case is a small land snail." Investigations have been carried on for two years to determine the effect of introducing healthy wild hares to infected areas where infected animals had been removed. Need for a study of the biology of the intermediary host is expressed.--From summ.

Lind, E. A. JÄNIKSEN ESIINTYMISESTÄ, LIIKKUMISAJOISTA JA KARVANVAIHDOSTA ENONTEKIÖN KILPISJÄRVELLÄ. [ON THE OCCURRENCE, DAILY ACTIVITY, AND SPRING MOULT OF THE SNOW HARE (LEPUS TIMIDUS) AT KILPISJÄRVI IN ENONTEKIÖ.] Suomen Riista 14: 106-111, 3 figs. 1961. WR 108: 20

[In Finnish with English summary.]

Lund, Hj. Munthe-Kaas. (Zool. Museum, Sarsgate 1, Oslo, Norway.) THE WINTER FOODS OF LEPUS TIMIDUS L. IN NORWAY. (A PRELIMINARY REPORT.) Trans. 4th Congr. Intern. Union Game Biol., Arnhem/Oosterbeek, 28 Sept.-5 Oct. 1959. p. 52-57, 1 fig. 1960. WR 108: 20

In English with summaries in German and Dutch. Winter foods of hare, roe deer, and elk in Norway are compared. Salix sp. and Corylus sp. rank high for the hare, while Sorbus sp. and Populus tremula rank highest for the roe deer, and Sorbus sp., Salix sp. and Populus tremula are the preferred food of the elk.

McIlwaine, C. Patricia. (Dept. Sci. Industrial Res., Lower Hutt, New Zealand.) REPRODUCTION AND BODY WEIGHTS OF THE WILD RABBIT ORYCTOLAGUS CUNICULUS (L.) IN HAWKE'S BAY, NEW ZEALAND. New Zealand Sci. 5(3): 325-341. Sept. 1962. WR 108: 20

Based upon the examinations of 2114 rabbits during 1952-9. The mean number of corpora lutea per female was 5.77. Rabbits less than 10 months and more than 33 months old had fewer corpora lutea than the 10 to 33-month age group. Resorption of embryos occurred in 53% of 226 litters. Eighteen per cent of ovulated ova were lost, the greatest loss being in the first 20 days of pregnancy. Approximately 47% of litters were lost in entirety. Prenatal sex ratio was 53.7% ♂♂ : 46.3% ♀♀. There was no significant difference between paunched weights of ♂♂ and ♀♀. Seasonal and annual changes in body weight were found.--From summ.

Milonski, Mike. WHY THEY ARE WHERE THEY ARE! Mo. Conservationist 23(11): 1-3, 1 fig., illus. Nov. 1962. WR 108: 20

Considerable variation was found in the weights of 175,861 cottontail rabbits collected in Mo. during 1941. A relationship was shown between the quality of the soil and the size of the rabbit by spotting weight records on soil maps. Rich soils produced the largest rabbits but, being intensively cultivated, supported smaller populations than medium fertility soils which were fertile enough to maintain high populations yet were not as intensively cultivated. Low fertility soils produced low populations of rabbits.

Mykytowycz, R. (C.S.I.R.O., Canberra, Australia.) EPIDEMIOLOGY OF COCCIDIOSIS (EIMERIA SPP.) IN AN EXPERIMENTAL POPULATION OF THE AUSTRALIAN WILD RABBIT, ORYCTOLAGUS CUNICULUS (L.). Parasitol. 52(3/4): 375-395, 12 figs. Nov. 1962. WR 108: 21

Based on oocyst counts in 2,326 fecal specimens, epidemiology was studied involving 7 spp. of Eimeria in a free-living population of wild rabbits confined in an experimental enclosure. Rabbit mortality was analyzed, and coccidiosis was found not to be responsible for the general mortality pattern. Predation by birds was directly responsible for the death of many more rabbits than was coccidiosis.

Ocetkiewicz, Jadwiga. (Krakau, Poland.) ESSAI DE L'ÉLEVAGE DU LIÈVRE LOGÉ DANS UNE CAGE. [BREEDING TRIALS OF HARES IN CAGES.] Trans. 4th Congr. Intern. Union Game Biol., Arnhem/Oosterbeek. 28 Sept.-5 Oct. 1959. p. 114-121, 3 figs. 1960. WR 108: 21

In French with English, German, and Dutch summaries. The history of attempts at breeding hares in cages is reviewed. The former difficulty of coccidiosis infection has seemingly been avoided by the use of cages with double floorings, preventing the contamination of hares and their food by excrement.

Rieck, Walter. (Inst. für Jagkunde, Hann. Münden, Germany.) ANALYSE VON FELDHASENSTRECKEN NACH DEM GEWICHT DER AUGENLINSE. [ANALYSIS OF FIELDHARE-BAGS WITH THE WEIGHT OF THE CRYSTALLINE LENS.] Trans. 5th Congr. Intern. Union Game Biol., Bologna. 4-10 Sept. 1961. p. 21-29, 4 figs. May 1962. WR 108: 21

In German with English and Italian summaries. A report of the effective use of the dried-lens weight technique in the aging of hares during 1959 and 1960 in Germany.

Schierbaum, Donald. (RFD 2, Altamont, N. Y.) BREEDING BY A JUVENILE COTTONTAIL RABBIT. N. Y. Fish & Game J. 9(2): 143. July 1962. WR 108: 21

The examination of a juvenile cottontail with a reproductive tract having corpora lutea scars indicated that the animal had bred at approximately 3 months of age and was approximately 4 months old when she produced a litter.--W. T. Van Velzen.

Spiecker, D. (Forschungsstelle für Jagdkinde und Wildschadenverhütung, Beuel-Niederholtorf, Germany.) ÜBER VERSUCHE DER KOKZIDIENBEKÄMPFUNG DES HASEN. [INVESTIGATIONS ON FIGHTING COCCIDIOSIS.] Trans. 4th Congr. Intern. Union Game Biol., Arnhem/Oosterbeek. 28 Sept.-5 Oct. 1959. p. 86-90. 1960. WR 108: 21

In German with English and Dutch summaries. Young hares are more susceptible to coccidiosis than adults. Tests with Handa, Suprunal, Furacin and Davosin on sick rabbits indicated that these preparations had strong coccidiostatic effects, and in the case of Davosin no cysts were found on the rabbits tested after 13 days.

Vaccari, I., G. Ballarini, and G. Pieresca. (Inst. Vet. Med. Clinic & Infectious Diseases, University, Parma, Italy.) THEILERIASI DELLE LEPRI -- EQUIVALENZE E RAPPORTI LIMITARI EMATICI IN INDIVIDUI DI LEPUS EUROPAEUS PALL. AMMALATI E CLINICAMENTE SANI. [THEILERIASIS OF HARES: THE HEMATOLOGY OF NORMAL AND INFECTED HARES (LEPUS EUROPAEUS PALL.).] Trans. 5th Congr. Intern. Union Game Biol., Bologna. 4-10 Sept. 1961. p. 87-93, 1 fig. May 1962. WR 108: 21

In Italian with German summary.

RODENTS--MISCELLANEOUS

Fisler, George F. (Univ. Calif., Carmel Valley.) HOMING IN THE CALIFORNIA VOLE, MICROTUS CALIFORNICUS. Am. Midland Nat. 68(2): 357-368, 1 fig. Oct. 1962. WR 108: 21

Homing success diminished with distance of removal, and no voles returned after being removed more than 600 feet. Homing was successful up to a distance of about six times the diameter of a hypothetical circular home range. Some voles remained at release sites where there were no voles, but none remained in areas where voles were present.

German, A. L. [THE DEGREE OF RESISTANCE TO THIRST OF SOME MURINE RODENTS OF THE STEPPE ZONE.] Zool. Zhur. 40(6): 914-921. 1961. [From Biol. Abstr. 40(1), 1962, from Referat. Zhur., Biol., 1962, no. 21231.] WR 108: 22

Translation [from Russian]. Resistance of several species to water deficiency was tested by feeding animals exclusively on air-dried oats. Microtus oeconomus died in 2-3 days, having lost 25% of their body weight; Microtus arvalis and Evotomys glareolus died in 3-4 days, having lost 35-40% of their weight; Lagurus lagurus died in 10-15 days after losing 50% of their weight. Younger animals died sooner than older ones. Mice lived 25 days, or for the full duration of the experiment, and lost no more than 19% of their weight.

Getz, Lowell L. AGGRESSIVE BEHAVIOR OF THE MEADOW AND PRAIRIE VOLES. J. Mammal. 43(3): 351-358, 4 figs. Aug. 1962. WR 108: 22

A comparison of the intra- and interspecific aggressive behavior of the prairie vole (Microtus ochrogaster), and the meadow vole (M. pennsylvanicus). The prairie vole was found to display little aggressive behavior towards others of its own species. The meadow vole was intolerant of other individuals of its own species. Prairie voles appeared to be dominant over meadow voles. There was less interspecific aggressive behavior between prairie and meadow voles than intraspecific aggressive behavior among meadow voles.--From auth. abstr.

Getz, Lowell L. (Univ. Mich., Ann Arbor.) NOTES ON THE WATER BALANCE OF THE REDBACK VOLE. Ecology 43(3): 565-566. Summer 1962. WR 108: 22

Conclusions: Neither water consumption nor evaporative water losses of the redback vole appear to be influenced by humidity; both are greater at higher temperatures, however. Although water consumption is relatively high, the redback vole may be able to maintain itself on greatly reduced rations (up to 67%) for at least short periods.

Goertz, John William. THE INFLUENCE OF HABITAT QUALITY UPON DENSITY OF COTTON RAT POPULATIONS. Ph.D. thesis, Oreg. State Univ. ix + 81 p., 27 figs. 1962. WR 108: 22

In western Oklahoma during 1959 to 1961, a total of 3,453 cotton rats was trapped with 10,016 captures in 74,206 trap-nights. The chief factors considered are habitat preferences, home range, movements, disappearance rate, and population fluctuation.

Jellison, William L., Matti Helminen and J. William Vinson. PRESENCE OF A PULMONARY FUNGUS IN RODENTS IN FINLAND. Ann. Med. Expt. Fenn. 38(4): 1-8. 1960. WR 108: 22

Emmonsia was found in 10 animals representing 3 genera of rodents in Finland in 1959. The hosts were: Arvicola terrestris, Microtus agrestis, and Ondatra zibethica.--From summ.

Johnson, Donald Ralph. EFFECTS OF HABITAT CHANGE ON THE FOOD HABITS OF RODENTS. Ph.D. thesis, Colo. State Univ. 104 p. 1962. [From Dissertation Abstr. 23(4), 1962.] WR 108: 22

A three-year study of the kinds, frequencies and amounts of food eaten by deer mice (Peromyscus maniculatus), least chipmunks (Eutamias minimus), and montane voles (Microtus montanus) in western Colo. Food habits of rodents on ranges treated with 2,4-D were compared with untreated ranges. Lists of food items comprising more than 5% of the total volume are listed for the deer mice and chipmunks. Deer mice responded to habitat changes and ate the kinds of food available, with the relative proportions of these foods unchanged. Availability governed the diet of least chipmunks on treated areas, but habitat change had no effect on the diet of montane voles.--From abstr.

Kalela, Olavi, Terttu Koponen, Esko A. Lind, Uolevi Skarén, and Johan Tast. (Univ. Helsinki, Helsinki, Finland.) SEASONAL CHANGE OF HABITAT IN THE NORWEGIAN LEMMING, LEMMUS LEMMUS (L.). Ann. Acad. Sci. Fenn., Ser. A, IV. Biol. 55. 72 p., 9 figs. + 3 pls. May 1961. WR 108: 23

During the period of early Aug. to early Oct., lemmings moved from peatlands containing a variety of mosses and sedges to areas with mineral soil and a rich moss carpet. Mature ♂♂ migrated in Aug. and early Sept. and mature ♀♀ and immatures of both sexes migrated later. Departure of mature ♂♂ appeared to be associated with developing aggressiveness of ♀♀.

Koponen, Terttu, Aila Kokkonen, and Olavi Kalela. (Univ. Helsinki, Helsinki, Finland.) ON A CASE OF SPRING MIGRATION IN THE NORWEGIAN LEMMING. Ann. Acad. Sci. Fenn., Ser. A, IV. Biol. 52. p. 1-30, 8 figs. Apr. 1961. WR 108: 23

Animals migrated from winter habitats in the alpine zone on mineral soil with rich moss growth to the lowest portion of the alpine zone and the birch zone with peat soil. Migration started about 10 May and continued until early June. Most animals pursued a relatively straight course northward, but sometimes changes occurred in direction of the course, and some animals went southward. Observations were made chiefly on lemmings on the ice of Lake Kilpisjarvi, where moving animals and tracks were studied. Animals avoided wide open stretches of ice and appeared to orient toward the shore.

Koshkina, T. V. [NEW DATA ON THE NUTRITION HABITS OF THE NORWEGIAN LEMMING.] Bull. Moscow Obshch. Ispit. Prirody (Biol.) 66(6): 15-32. 1961. [From J. Mammal. 43(3), 1962.] WR 108: 23

In Russian with English summary.

Kuwahata, Tsutomu. STUDIES ON POPULATION FLUCTUATION OF THE RED-BACKED VOLE, CLETHRIONOMYS RUFOCANUS BEDFORDIAE (THOMAS). (1) AN ANALYSIS OF A PROCESS OF THE GRADATION. Bull. Govt. Forest Expt. Sta. (143): 15-38, 8 figs. Aug. 1962. WR 108: 23

[In Japanese with English summary.] A vole population was studied 3-1/2 years, and an increase, peak, and decline in the population were observed. Increase continued from the time the study was started in Nov. 1957 to June 1959; the peak period extended from Aug. to Nov. 1959; the period of decline extended from Dec. 1959 to May 1961. During the period of increase, sexual maturation of sub-adult males was accelerated, and breeding periods in the spring and fall were longer than in peak and declining periods. Weather was the chief factor determining length of the breeding season and the speed of sexual maturation, but differences in reproductive activities were related to differences in relations between older and younger generations in the population.

Kuzmina, I. E. [NEW DATA ON THE ECOLOGY OF MICROTUS (PITYMYS) SUBTERRANEUS SEL.-LONG.] Bull. Moscow Obshch. Ispit. Prirody (Biol.) 66(6): 33-42. 1961. [From J. Mammal. 43(3), 1962.] WR 108: 23

In Russian with English summary.

Long, Charles A. NATURAL HISTORY OF THE BRUSH MOUSE (PEROMYSCUS BOYLII) IN KANSAS WITH DESCRIPTION OF A NEW SUBSPECIES. Univ. Kans. Museum Nat. Hist. Publ. 14(6): 99-110, 3 figs. 29 Dec. 1961. WR 108: 23

A short account of the ecology and behavior of the brush mouse is given.--W. T. Van Velzen.

McCulloch, Clay Y., Jr. POPULATION AND RANGE EFFECTS OF RODENTS ON THE SAND SAGEBRUSH GRASSLANDS OF WESTERN OKLAHOMA. Okla. State Univ. Publ. Biol. Studies, Ser. no. 9. vii + 112 p., 47 tables. 10 Apr. 1962. Price $1.50. WR 108: 23

A study conducted from June 1956 to Nov. 1958 to determine comparative densities of rodent species populations, their relation to stages of plant succession, some effects on range lands and times and places where rodent control may be needed.--From auth. summ.

Poltev, V. I., and I. N. Gritsenko. PRODUCING VIRULENT BACTERIA TO CONTROL THE WATER VOLE (ARVICOLA TERRESTRIS L.). Akad. Nauk SSSR Sibirskoe Otdel. Izvest. 1961(6): 99-105. 1961. Photocopies of 18 p. transl. [1962] may be ordered from the Natl. Agr. Library, USDA, Washington 25, D. C. [From Bibliog. Agr. 26(11), 1962.] WR 108: 24

Rotshild, E. V., M. N. Shilov, V. M. Smirin, and E. S. Shilova. [HAY STACKS AS A RESERVE OF FOOD FOR THE LARGE GERBIL (RHOMBOMYS).] Bull. Moscow Obshch. Ispit. Prirody (Biol.) 66(6): 43-50. 1961. [From J. Mammal. 43(3), 1962.] WR 108: 24
In Russian with English summary.

Saint-Girons, Marie-Charlotte. LE RYTHME NYCTHÉMÉRAL D'ACTIVITÉ DU CAMPAGNOL ROUX CLETHRIONOMYS GLAREOLUS (SCHREBER) 1780. II. LES FEMELLES. [THE DIEL ACTIVITY PATTERN OF THE BANK VOLE, CLETHRIONOMYS GLAREOLUS (SCHREBER) 1780. II. THE FEMALES.] Mammalia 25(3): 342-357. Sept. 1961. [From J. Mammal. 43(3), 1962.] WR 108: 24
[In French.]

Snigirevskaya, E. M. [OBSERVATION OF MICROTUS OECONOMUS ON CENTRAL VOLGA ISLANDS.] Trudy Zool. Inst. Akad. Nauk SSSR 29: 137-155. 1961. [From Biol. Abstr. 40(1), 1962, from Referat. Zhur., Biol., 1962, no. 6I257.] WR 108: 24
Translation [from Russian]. A description is given of burrow construction, feeding habits, propagation, molting, annual cycle, population changes, and destructiveness. Spread of M. oeconomus from "safety islands" inhabited during flood periods with receding flood waters was traced. It was noted that M. oeconomus is able to erase water barriers.

Sviridenko, P. A. [A COMPARATIVE EVALUATION OF THE ATTRACTIVENESS OF THE SEEDS OF TREES AND BUSHES AS BAIT FOR MURINE RODENTS.] Zool. Zhur. 40(5): 763-767. 1961. [From Biol. Abstr. 40(1), 1962, from Referat. Zhur., Biol., 1962, no. 2I243.] WR 108: 24
Translation [from Russian]. Original with English summary. A study was made under laboratory conditions of the attractiveness as bait of the seeds of 26 spp. of trees and 17 spp. of bushes for Apodemus silvaticus, A. flavicollis, A. agrarius, the "Kurganchik mouse," Mus musculus, Clethrionomys sp., and the "gray field mouse." A. flavicollis ate the seeds of the greatest number of spp.--19 trees and 9 bushes, while the Clethrionomys sp. ate the seeds of 27. A. silvaticus eats the seeds of many spp. M. musculus, the "Kurganichik mouse," and the "gray field mouse" ate the seeds of only a small number of spp. The seeds most frequently eaten by almost all of the rodents were those of the birch, elm, beech, pear, linden, larch, black mulberry, Lespedeza bicolor, and "sikurenego" (water hemlock?).--Abstract.

Vorontsov, P. N. [THE ECOLOGICAL AND SOME MORPHOLOGICAL CHARACTERISTICS OF CLETHRIONOMYS TILESIUS OF NORTHEASTERN EUROPE.] Trudy Zool. Inst. Akad. Nauk SSSR 29: 101-136. 1961. [From Biol. Abstr. 40(1), 1962, from Referat. Zhur., Biol., 1962, no. 8I286.] WR 108: 24
Translation [from Russian]. Descriptions are given of the distribution of the red vole and European red vole during periods of high and low population numbers. Information is also given on reproduction, shelters, and seasonal feeding habits.

Wagner, Helmut O. DIE NAGETIERE EINER GEBIRSSABDACHUNG IN SÜDMEXIKO UND IHRE BEZIEHUNGEN ZUR UMWELT. [THE RODENTS OF A MOUNTAIN SLOPE IN SOUTHERN MEXICO AND THEIR RELATION TO THEIR ENVIRONMENT.] Zool. Jahrb., Syst. 89(2): 177-242. 30 Nov. 1961. [From J. Mammal. 43(3), 1962.] WR 108: 24
[In German.]

Williams, Olwen. A TECHNIQUE FOR STUDYING MICROTINE FOOD HABITS. J. Mammal. 43(3): 365-368, 1 pl. Aug. 1962. WR 108: 25

Abstract: It has long been recognized that microtines are essentially vegetarian in their food habits, but little has been learned about the exact plant species which comprise their diet because the finely chewed material has defied easy identification. Modification of existing techniques, based on the examination of the stomach contents of field-trapped animals, by the addition of a simple staining procedure makes it possible to identify much of this plant material to species.

Won, P. O., and H. C. Woo. [FOREST DAMAGE BY THE RED-BACKED MOUSE IN KOREA (IN CHANG-CHON NATIONAL FOREST).] Res. & Invest. Inst. Agr. 1: 1-9, 4 pls. Oct. 1958. [From J. Mammal. 43(3), 1962.] WR 108: 25

In Korean with English summary.

Zejda, Jan. AGE STRUCTURE IN POPULATIONS OF THE BANK VOLE, CLETHRIONOMYS GLAREOLUS SCHREBER 1780. Ceskoslovenska Akad. Ved. Zool. Listy 10(24): 249-264. 1961. [From J. Mammal. 43(3), 1962.] WR 108: 25

Zubko, Ya. P., and S. I. Ostryakov. [THE REPRODUCTION OF ELLOBIUS TALPINUS PALLAS IN THE SOUTHERN UKRAINE.] Zool. Zhur. 40(10): 1577-1579. 1961. [From Biol. Abstr. 40(1), 1962, from Referat. Zhur., Biol., 1962, no. 8I293.] WR 108: 25

Translation [from Russian]. Original with English summary. Information is given on the biology of the species.

RATTUS AND MUS

Justice, Keith E. ECOLOGICAL AND GENETICAL STUDIES OF EVOLUTIONARY FORCES ACTING ON DESERT POPULATIONS OF MUS MUSCULUS. Ariz.-Sonora Desert Museum, Inc. v + 68 p., 34 figs. Aug. 1962. WR 108: 25

An attempt to learn as much as possible about the autecology of wild house mice, especially with regard to population dynamics and breeding structure of the population. The author has attempted to give a brief summary of the work with his interpretations and data in sufficient detail for others to draw their own conclusions. Trapping was conducted in a variety of habitats and data are summarized briefly by habitat type.--W. T. Van Velzen.

Trinkler, O. K. [HELMINTHS OF RATTUS NORVEGICUS BERK AND MUS MUSCULUS L. IN THE GORKI AREA.] Uchenie Zapiski Gorkovski Gosudarstvenni Pedagog. Inst. 19: 73-77. 1960. [Listed in Helminthol. Abstr. 30(4), 1961.] WR 108: 25

[In Russian.]

SCIURIDS

Bronson, F. H. (R. B. Jackson Memorial Lab., Bar Harbor, Maine.) DAILY AND SEASONAL ACTIVITY PATTERNS IN WOODCHUCKS. J. Mammal. 43(3): 425-427, 2 figs. Aug. 1962. WR 108: 25

Woodchuck activity patterns were found to show strong seasonal changes. The average times of onset and cessation of daily activity in the population varied seasonally as did the shape of the daily activity curves. Data are inadequate to show more than simple correlations between activity and environmental factors.--Author.

Butterfield, Robert T. (Dept. Nat. Resources, Buckhannon, W. Va.) EIGHT STEPS TO MORE SQUIRRELS. W. Va. Conserv. 26(9): 5-8, illus. Nov. 1962. WR 108: 25

Suggestions for improving habitat and increasing squirrel populations are discussed under the following headings: den trees, artificial den boxes, food trees, food tree planting, winterfeeding, predation, sport, and normal hunting.

Courtier, F. A. GREY SQUIRRELS IN WOODLANDS. Great Britain Min. Agr. Fisheries & Food 69(3): 136-138. June 1962. [From Bibliog. Agr. 26(10), 1962.] WR 108: 26
Control with traps.

Gooden, Sam K. (2620 Eleane St., Arkadelphia, Ark.) SQUIRREL DE-BARKING OF LOBLOLLY PINE. Proc. 15th Ann. Conf. SE Assoc. Game & Fish Comms. p. 116-118. 1961 [1962]. WR 108: 26
Descriptions are given of the type and extent of damage followed by a short discussion of the times of the year damage is done.--W. T. Van Velzen.

Ismagilov, M. I. [TYPES OF COLONIES OF THE BOBAC (MARMOTA BOBAC MUELL.) AND ITS EFFECT ON VEGETATION IN AREAS OF VIRGIN LAND RECLAMATION IN KAZAKHSTAN.] Zool. Zhur. 40(6): 905-913. 1961. [From Biol. Abstr. 40(1), 1962, from Referat. Zhur., Biol., 1962, no. 6I261.] WR 108: 26
Translation [from Russian].

Nyholm, Erik S. ORAVAN SYKSYISESTÄ KARVANVAIHDOSTA JA NAHAN PUHDISTUMISESTA. [THE AUTUMN MOULT AND PRIMENESS OF THE FUR OF SQUIRREL (SCIURUS VULGARIS).] Suomen Riista 14: 95-105, 5 figs. 1961. WR 108: 26
[In Finnish with English summary.]

Ovsyukova, N. I. [A CASE OF TRICHINELLIASIS IN SCIURUS VULGARIS ON THE CHUKOT PENINSULA.] Med. Parazitol. i Parazitarnie Bolezni (Moscow) 30(2): 226. 1961. [Listed in Helminthol. Abstr. 31(2), 1962.] WR 108: 26
[In Russian.]

Paynter, E. L. (Dept. Nat. Resources, Regina, Sask.) THE BLACKTAILED PRAIRIE DOG IN CANADA. Blue Jay 20(3): 124-125. Sept. 1962. WR 108: 26
Following a 1961 survey an estimate was made of 2,400 acres occupied by prairie dogs with an approximate population of 45,000 animals. The author suggests that the species should not be protected nor should an extermination program be carried out against it.--W. T. Van Velzen.

Petrovskii, Yu. T. [SPECIFIC ECOLOGICAL CHARACTERISTICS OF THE MOTTLED SUSLIK IN BELORUSSIA.] Zool. Zhur. 40(5): 736-748. 1961. [From Biol. Abstr. 39(6, pt. 1), 1962, from Referat. Zhur., Biol., 1962, no. 21244.] WR 108: 26
Translation [from Russian]. Original with English summary. Data on sex and age composition, nutrition, reproduction, shedding, and hibernation of Citellus suslicus.

Shubin, G. P. AVIATION-CHEMICAL METHOD OF EXTERMINATING THE RED-CHEEKED MARMOT. Zashchita Rast. ot Vreditelei i Boleznei 1961(3): 10-11. Mar. 1961. Photocopies of 3 p. transl [1962] may be ordered from the Natl. Agr. Library, USDA, Washington 25, D. C. [From Bibliog. Agr. 26(11), 1962.] WR 108: 26

Snyder, Robert L. (Univ. Pa., Philadelphia.) REPRODUCTIVE PERFORMANCE OF A POPULATION OF WOODCHUCKS AFTER A CHANGE IN SEX RATIO. Ecology 43(3): 506-515, 1 fig. Summer 1962. WR 108: 26
Reproductive rates were studied under the following conditions: (1) selective removal of females, (2) selective removal of older animals, and (3) an undisturbed population. Reproductive rates were 1.20, 2.21, and 2.97 respectively. The conclusion was that reproductive rates were influenced by factors endogenous to each population. Age composition influenced reproductive rates because only a portion of the yearling female woodchucks attain sexual maturity and because litter size increases with age in woodchucks. Failure of females to breed and excessive losses of embryos and fetuses in utero were attributed to disturbances in maternal physiology which may have occurred in response to sociopsychologic pressures. In turn the data indicate that the intensity of the stimuli from social pressures depends upon the structure of the population in terms of age composition and sex ratio as well as upon its density.--From summ. & concl.

SCIURIDS--Continued

Tomich, P. Quentin. THE ANNUAL CYCLE OF THE CALIFORNIA GROUND SQUIRREL CITELLUS BEECHEYI. Univ. Calif. Publ. Zoöl. 65(3): 213-282, frontispiece, 23 figs. 1962. WR 108: 27

A two-year study made in 2 areas 12 miles apart in the Central Valley of California. The criteria of tooth wear, closure of the distal femoral epiphysis, and placental scars allowed age classifications of all adult squirrels. More than half were first-year animals, and few were older than 3 years. Breeding occurs mainly in March and April. Gestation lasts approximately 30 days. Adult males become dormant in July or August followed by adult females in September or October. Data are presented on body weight, pituitary weight and adrenal weight and size. Population size is correlated with regional environment.--From auth. summ.

BEAVER

Coutu, D. James. A STUDY OF THE REPRODUCTIVE RATE OF BEAVER IN MAINE. M.S. thesis, Univ. Maine. iv + 61 p., 10 figs. Aug. 1961. WR 108: 27

A study to determine the rate of reproduction of beaver in Maine for the years 1959 and 1960. Objectives were to determine any changes in the overall rate of reproduction since 1947-1950, to investigate possible differences in reproduction between beaver of different climatic zones and to compare the reproductive rate between large and small beaver. Investigations show that the reproductive rate in Maine beaver has not changed statistically in the past decade. Beaver of the Central Zone produced significantly more young than did those of the Northern Zone. Measurable differences occurred between large and small beaver.--From auth. abstr.

Knudsen, George J. RELATIONSHIPS OF BEAVER TO FORESTS, TROUT AND WILDLIFE IN WISCONSIN. Wis. Conserv. Dept., Tech. Bull. no. 25. 52 p., illus. 1962. WR 108: 27

Beaver ponds do more harm than good to trout streams, but the ponds are desirable in producing habitat for valuable game species such as muskrats and ducks. By selective cutting of aspen and thus favoring growth of less palatable species, beavers reduce to carrying capacity of their habitat for the future. Beaver population should be maintained at a level which will prevent conflict with trout and forestry interests.

Lavrov, L. [BEAVERS IN THE KONDA RIVER BASIN.] Okhota & Okhotnoe Khoz. 9: 29-32. 1961. [From Biol. Abstr. 40(1), 1962, from Referat. Zhur., Biol., 1962, no. 8I297.] WR 108: 27

Translation [from Russian]. Twenty-three settlements of indigenous W. Siberian beavers were found, and characteristics of stations and information on ecology are given.

Wilkinson, Philip Maury. A LIFE HISTORY STUDY OF THE BEAVER IN EAST-CENTRAL ALABAMA. M.S. thesis, Auburn Univ. xvi + 76 p., 20 figs. 24 Aug. 1962. WR 108: 27

A total of 150 beavers was trapped, and these showed a 100 : 100 sex ratio. Sixteen per cent were kits, 18% yearlings, 24% 2-year-olds, and 42% adults. An average of 4.6 beavers was found in 8 colonies. Mating was in Dec. and Jan. and parturition in Mar. and Apr., with an average of 2.52 young per litter. Yearling ♂♂ may be capable of breeding, but ♀♀ do not breed until the third winter after birth. Aquatic vegetation was heavily used for food during the spring and summer, with bark and woody material used more in fall and winter. Food was not stored for winter use. Two species of parasites were found: Platypsyllus castoris and Stichorchis subtriquetrus.

Chabreck, Robert H. (La. Wild Life & Fish Comm., Grand Chenier.) DAILY ACTIVITY OF NUTRIA IN LOUISIANA. J. Mammal. 43(3): 337-344, 4 figs. Aug. 1962. WR 108: 28

Daily activity was measured with a recorder placed on a nutria trail. Each nutria crossing the trail was determined within a five-minute period for each month during the year. Activity was greatest at night. Daylight activity was very slight. Activity at dusk was less than at dawn.--From auth. abstr.

Ehrlich, Stefan. TWO EXPERIMENTS IN INDUCING NUTRIA AGGREGATION IN UNFENCED ARTIFICIAL PONDS. Hydrobiologia 19(4): 316-333. 1962. [From Biol. Abstr. 40 (1), 1962.] WR 108: 28

Two experiments with the nutria (Myocastor coypu) were carried out: in the first, animals were released by the experimenters; in the second, a feral population was used. Regular food distribution, provision of shelters and the cutting of channels in the weed beds were used to induce aggregation. In the first experiment, aggregation was noted in 2-3 months; in the second, not until almost 2 years had passed. Dense colonies were formed as a result of these aggregation tendencies and these tendencies persisted in the colonies. The intensified nutria activity in the area of the colonies resulted in the destruction of coarse pond vegetation in the neighborhood of the colony which was associated with an increase in fish yield in that fish pond.--K. E. Marshall.

Ehrlich, Stefan. (Kiriat Elieser, Bl. 118/23, Haifa, Israel.) EXPERIMENT ON THE ADAPTATION OF NUTRIA TO WINTER CONDITIONS. J. Mammal. 43(3): 418. Aug. 1962. WR 108: 28

An experiment carried out in Poland during 1954 showed that nutria can successfully survive severe winter conditions provided ponds are drained to prevent sheet-ice formation, thick vegetation is available, and populous and active colonies are present.--Author.

Ehrlich, S., and K. Jedynak. NUTRIA INFLUENCE ON A BOG LAKE IN NORTHERN POMORZE, POLAND. Hydrobiologia 19(3): 273-297, map. Mar. 1962. [From Bibliog. Agr. 26(10), 1962.] WR 108: 28

The aquatic plants and the nutria's nutrition.

Errington, Paul L. MUSKRATS AND MARSH MANAGEMENT. Stackpole Co., Harrisburg, Pa. 183 p., illus. 1961. $5.00. WR 108: 28

This book represents the synthesis of findings resulting from a lifetime of committed research on the muskrat. Dr. Errington ably discusses breeding habits, susceptibility to disease, legal protection, trapping methods, stocking, and predation. While the book performs a notable service in making readily available a wealth of information on the muskrat, it does an even greater service by imparting a well-balanced perspective in wildlife management. Coming from an authority on both muskrats and predation, this statement by Dr. Errington has particular significance: "Some of us feel that there is, or should be, more wildlife on earth than muskrats and more to wildlife management than making money out of muskrats or out of any managed or pampered species." The question of whether use of steel traps is humane is considered with characteristic realism, and the use of drown-sets is the recommended solution to the problem in muskrat and mink trapping. Although this book was written many years after Dr. Errington followed a trapline as a small boy in South Dakota, it imparts the enthusiasm of a small boy for the trapline--and much more eruditeness.--Paul A. Stewart.

Rosenmann A., Mario. (Univ. Chile, Santiago.) ONDATRA ZIBETHICA L. EN CHILE (RODENTIA, MURIDAE). [ONDATRA ZIBETHICA IN CHILE.] Invest. Zool. Chilenas 7: 159. [1961.] WR 108: 28

In Spanish with English summary. Apparently this species emigrated from Argentina to Navarino Island, Chile "about 5 or 6 years ago."

Ugorski, L. [USE OF THE PLATE AGGLUTINATION METHOD FOR THE DIAGNOSIS OF SALMONELLOSIS IN THE NUTRIA.] Med. Weter. 18(5): 291-293. May 1962. [From Bibliog. Agr. 26(10), 1962.] WR 108: 29
In Polish.

Wilson, Everett D., and Andrew A. Dewees. (Physiol. Lab., Downing St., Cambridge, England.) BODY WEIGHTS, ADRENAL WEIGHTS AND OESTROUS CYCLES OF NUTRIA. J. Mammal. 43(3): 362-364, 2 figs. Aug. 1962. WR 108: 29
Right and left adrenals, expressed in grams/kilogram body weight, averaged 0.627 for 38 ♂♂ and 0.512 for 31 ♀♀. A significant difference occurred between right and left adrenals, with the left being larger in both sexes. Body weights of 1 ♂ and 1 ♀ were recorded from 4 to 42 weeks of age. Female sexual maturity was reached at 5 months of age.--From auth. abstr.

BEARS

Jaczewski, Zbigniew, Janusz Gill, and Stanislaw Kozniewski. (Polish Acad. Sci., Popielno, Poland.) CAPACITY OF THE DIFFERENT PARTS OF THE DIGESTIVE TRACT IN THE BROWN BEAR. Trans. 4th Congr. Intern. Union Game Biol., Arnhem/Oosterbeek. 28 Sept.-5 Oct. 1959. p. 146-154, 4 figs. 1960. WR 108: 29
In English with summaries in German and Dutch. The relative capacity of the stomach of Ursus arctos is nearly 50% of the total capacity of the digestive tract. This fact and the ratio of body length to the length of the intestine indicates that the digestive tract of the brown bear is adapted principally to a meat diet. This is augmented by the similarity of the small and large intestines. The action of acetylocholine on the intestinal movements of the brown bear is discussed.

Jaczewski, Zbigniew, Janusz Gill, and Stanislaw Kozniewski. (Polish Acad. Sci., Popielno, Poland.) REGULATION OF BLOOD PRESSURE IN THE BROWN BEAR. Trans. 4th Congr. Intern. Union Game Biol., Arnhem/Oosterbeek. 28 Sept.-5 Oct. 1959. p. 131-145, 12 figs. 1960. WR 108: 29
In English with summaries in German and Dutch. Morphine when applied subcutaneously at the rate of 2-3 g/100 kg body weight [depending on age and condition of the animal] is an excellent drug for narcosis of Ursus arctos. It is, however, hardly applicable per os. In the brown bear, the blood pressure is extremely high, and the systolic-diastolic oscillations are extremely large. So far no mammalian species is known to possess such features of blood pressure. Other characteristics of bear physiology and the effects of other drugs on bear are given.

Krott, Peter. (Pinzolo, Carisolo, Trento, Italy.) EINIGE MITTEILUNGEN ÜBER DEN ALPENBÄREN. [SOME INFORMATION ABOUT BEAR IN THE ALPS.] Trans. 5th Congr. Intern. Union Game Biol., Bologna. 4-10 Sept. 1961. p. 208-222, 2 figs. May 1962. WR 108: 29
In German with English and Italian summaries. The bear of the Italian Alps is considered to be the Ursus arctos found elsewhere. Living conditions are poor in the Alps but the mountains provide escape cover and the bear population has been able to survive. Brown bear are not territorial. The details of dens (site, construction, and other data) are given. The brown bear is a true hibernator, and in the Alps predation on cattle and sheep is necessary for survival. An active preservation program is urged in order to maintain the bear in the Alps.--From summ.

Maynard, James E., and Frank P. Pauls. (Arctic Health Res. Center, Anchorage, Alaska.) TRICHINOSIS IN ALASKA / A REVIEW AND REPORT OF TWO OUTBREAKS DUE TO BEAR MEAT WITH OBSERVATIONS ON SERODIAGNOSIS AND SKIN TESTING. Am. J. Hyg. 76(3): 252-261, 2 figs. Nov. 1962. WR 108: 29

BEARS--Continued

Stickley, Allen R., Jr. (803 Elkton Rd., Newark, Del.) A BLACK BEAR TAGGING STUDY IN VIRGINIA. Proc. 15th Ann. Conf. SE Assoc. Game & Fish Comms. p. 43-52. 1961 [1962]. WR 108: 30

A study conducted from 1958 through 1960. One-hundred catches, involving 83 tagged and released bears were made. Bears were captured in No. 150 Newhouse steel traps and anesthetized with pentobarbital sodium delivered by means of "Cap-Chur" automatic projectile syringes.--From auth. summ.

RACCOON, RINGTAIL, COATI

Richards, Charles S. (Communicable Disease Center, PHS, Savannah, Ga.) HEPATOZOON PROCYONIS, N. SP., FROM THE RACCOON. J. Protozool. 8(4): 360-362, 6 figs. 1961. WR 108: 30

MUSTELIDS

Ben'kovskii, L. M. [THE GEOGRAPHICAL DISTRIBUTION OF WEASELS AND THEIR ECOLOGY ON SAKHALIN ISLAND.] Zool. Zhur. 40(11): 1747. 1961. [From Biol. Abstr. 40(1), 1962, from Referat. Zhur., Biol., 1962, no. 8I302.] WR 108: 30

Translation [from Russian]. Original with English summary. During last 10 days of Oct., weasels have white fur in northern regions and cinnamon-brown in southern. There are about 4 young per litter. Weasels are active only by day in summer and winter.--From abstr.

Bonnin-Laffargue, M., and R. Canivenc. ETUDE DE L'ACTIVITÉ DU BLAIRBAU EUROPÉEN (MELES MELES L.). [A STUDY OF THE ACTIVITY OF THE EUROPEAN BADGER (MELES MELES L.).] Mammalia 25(4): 476-484. Dec. 1961. [From J. Mammal. 43 (3), 1962.] WR 108: 30

[In French.]

Cambridge, G. W. ANAESTHETIC PROCEDURES SUITABLE FOR THE COYPU. J. Physiol. 162(2). 48 p. July 1962. [From Bibliog. Agr. 26(10), 1962.] WR 108: 30

Eichel, H. [THE GASTRO-INTESTINAL FLORA OF THE MINK.] Zentbl. Bakteriol. Parasitenk. Infektionskrankh. & Hyg., Abt. 1, 185(3): 367-371. Apr. 1962. [From Bibliog. Agr. 26(10), 1962.] WR 108: 30

In German with English summary.

Ishunin, G. I. [THE OTTER IN UZBEKISTAN.] Zool. Zhur. 40(11): 1745-1746. 1961. [From Biol. Abstr. 40(1), 1962, from Referat. Zhur., Biol., 1962, no. 8I303.] WR 108: 30

Translation [from Russian]. Original with English summary. Although otters are considered rare in Central Asia, field work showed them to be fairly numerous in some areas, having adapted to violent river currents. Otters leave streams in fall when flowage is reduced. Analysis of more than 1,000 scats showed food to be chiefly fish.

Lensink, Calvin Jay. THE HISTORY AND STATUS OF SEA OTTERS IN ALASKA. Ph.D. thesis, Purdue Univ. 216 p. 1962. [From long abstr. in Dissertation Abstr. 23(2), 1962.] WR 108: 30

A study to define the status of existing sea otter populations by reviewing historical records of past populations, tracing growth and establishing size and distribution of existing populations and investigating biology phases of immediate importance to growth and welfare of existing populations. With a low of about 500 individuals around 1911, the population has now reached approximately 40,000. The primary factor in distribution appears to be suitable shallow water areas for feeding. Few enemies and low mortality favor a population build-up. Sea otters are now numerous enough to warrant an annual harvesting.--W. T. Van Velzen.

Nikolaev, A. M. [THE BIOLOGY AND POPULATION SPREAD OF THE SEA OTTER.] Trudy Soveshch. Ikhtiol. Komiss. Akad. SSSR 12: 214-217. 1961. [From Biol. Abstr. 40(1), 1962, from Referat. Zhur., Biol., 1962, no. 8I304.] WR 108: 31

Translation [from Russian]. In summer the sea otter lives an almost fixed life, sometimes moving a few dozen km in search for food or shelter from storms. How good the sea otter's station is depends on the number of small rocky islands in the sea near shore, the area of fields of algae on the sea's surface, kind of littoral and supralittoral, depth of sea and location of station with respect to outer edges of island. Four types of station are distinguished, 2 of which are described. Some data are given on daily rhythm of life, feeding, and reproduction. Since not one observation could be made of a female with 2 young of current and previous year, it is suggested that sea otter reproduces once every 2 years. Large-scale mating takes place in June and July and young are born between Mar. and May, so that duration of pregnancy is about 9 or 10 months. Sea otters can be netted most expeditiously and without damage in summer. An annual census should be made of the sea otter, conservation measures for it should be intensified, and it should be protected against killer whales by introduction of a bounty for destruction of latter as predators.--From abstr.

Parker, R. L. RABIES IN SKUNKS IN THE NORTH-CENTRAL STATES. Proc. 65th Ann. Meeting U.S. Livestock Sanitation Assoc. (Minneapolis, 1961). p. 273-280. 1962. [From Vet. Bull. 32(10), 1962.] WR 108: 31

Skunks are the most important reservoir of rabies in the north-central region of the USA. In 1958, rabies was confirmed in 782 skunks in 12 states. The 1949-58 increase in the incidence of rabies in skunks followed a decrease in trapping and in the percentage of arable land. An hypothesis of the epidemiology of rabies in skunks was suggested. Infection takes place in the winter months when skunks retire underground in groups dominated by an adult male. Unattached males attempting to join these groups are driven off. Skunks receiving a large dose of virus are responsible for the April and July peaks in the incidence of rabies, and skunks receiving a low dose may become carriers. In the Southeast, the principal reservoir of rabies is the fox, and in the Southwest--the bat.

Rust, Charles C. (Dept. Zool., Univ. Wis., Madison.) TEMPERATURE AS A MODIFYING FACTOR IN THE SPRING PELAGE OF SHORT-TAILED WEASELS. J. Mammal. 43 (3): 323-328. Aug. 1962. WR 108: 31

Abstract: Ten short-tailed weasels (Mustela erminea bangsi), in white pelage, were trapped in Taylor County, Wis. during Nov. and Dec. 1960. On 11 Jan. 1961, the animals were divided into 2 groups of 5 animals each and placed in environmental rooms having artificial daylengths of 18 hours. Group I was exposed to a constant temperature of ca. 70°F; Group II was exposed to a constant temperature of ca. 20°F. All of the animals had molted into a brown pelage by 16 Mar. 1961. The onset of the molt was delayed in the cold room; but once started, proceeded rapidly, the white winter pelage being completely replaced by brown as the molt progressed. As white hairs were shed in the warm room, brown hairs appeared, producing intermixed areas of brown and white.

DOGS, WOLVES, FOXES

Beresford-Jones, W. P. OBSERVATIONS ON THE HELMINTHS OF BRITISH WILD RED FOXES. Vet. Record 73(36): 882-883. 1961. [From abstr. in Helminthol. Abstr. 31(2), 1962.] WR 108: 31

An account of the results of examination of 300 British wild red foxes during 1952-57. The most frequent helminths were Toxocara canis in 137 and Uncinaria stenocephala in 129. Ten other species were identified.

Brooks, David M. MILLION DOLLAR FOX. Outdoor Ind. 6(5): 16-20, 3 figs. Nov. 1962. WR 108: 32

According to records kept from 1875 to 1960, bountied foxes totalled 333,518 and $1,026,318 was spent on this program. Seventy per cent of these foxes were bountied between 1950 and 1960. Population peaks, determined by bounty records, occurred in 1926, 1934, 1946, 1954, and 1960. From information available it appears that predation of fox on rabbits is not entirely responsible for highs and lows in rabbit-hunting success but it does not disprove that fox predation may have a suppressing effect on rabbit populations. Prior to 1953 it was mandatory, by state law, for all counties to pay fox bounties. However, presently some counties have stopped bounty payments or appropriate only a limited amount per year.--W. T. Van Velzen.

Egoscue, Harold J. (Univ. Utah, Dugway.) ECOLOGY AND LIFE HISTORY OF THE KIT FOX IN TOOELE COUNTY, UTAH. Ecology 43(3): 481-497. 1962. WR 108: 32

The population of the 25-square-mile study area was estimated at one adult fox per 2 square miles. Breeding season extended from late Dec. to early Feb., and most pups were born in Mar., with 4-5 per litter. Three families were found consisting of one male, two females, and two litters of pups. Families usually remained together until Sept., when the pups dispersed and left the areas where they were raised. One adult female maintained continuous residence in the same section of the study area for 4 years. Ninety to 95 per cent of the food was jack rabbits, with the remainder consisting of deer mice, kangaroo rats, cottontails, and small birds. Captive foxes ate an average of 175 grams of food each 24 hours.

Fay, F. H., and F. S. L. Williamson. (Public Health Serv., Anchorage, Alaska.) STUDIES ON THE HELMINTH FAUNA OF ALASKA. XXXIX. ECHINOCOCCUS LEUCKART, 1863, AND OTHER HELMINTHS OF FOXES ON THE PRIBILOF ISLANDS. Canadian J. Zool. 40(5): 767-772, 1 fig. Sept. 1962. WR 108: 32

Abstract: In a preliminary reinvestigation of the parasites of arctic foxes (Alopex lagopus) on St. George Island, seven species of intestinal helminths were found. Four of these, viz. Uncinaria stenocephala, Maritrema afanassjewi, Taenia crassiceps, and Echinococcus multilocularis, are recorded for the first time from that locality, and the last three are new records for the fauna of the Pribilof Islands. Recent introduction of these helminths is regarded as improbable. The public health significance of E. multilocularis on St. George Island is briefly discussed.

Helminen, Matti. KETUN SAMSON-OMINAISUUDEN ESIINTYMISESTÄ SUOMESSA. [ON THE OCCURRENCE OF THE SAMSON CHARACTER IN WILD FOX (VULPES VULPES) POPULATIONS IN FINLAND.] Suomen Riista 14: 143-157, 7 figs. 1961. WR 108: 32

[In Finnish with English summary.]

Shaldibin, L. S. [PARASITIC WORMS OF WOLVES IN THE MORDOV A.S.S.R.] Uchenie Zapiski Gorkovski Gosudarstvenni Pedagog. Inst. 19: 65-70. 1957. [Listed in Helminthol. Abstr. 30(4), 1961.] WR 108: 32

[In Russian.]

CATS

Sapozhenkov, Yu. F. [THE ECOLOGY OF THE STEPPE CAT (FELIS LIBYCA FORST.) IN THE EASTERN KARAKUM DESERT.] Zool. Zhur. 40(10): 1585-1586. 1961. [From Biol. Abstr. 40(1), 1962, from Referat. Zhur., Biol., 1962, no. 8I298.] WR 108: 32

Translation [from Russian]. Original with English summary. F. libyca is found everywhere here, but it prefers thickets. It leads a wandering nocturnal life. In summer some of individuals migrate to places with accessible water-holes. Estrus occurs in first half of Feb. Female bears young in burrows (usually abandoned burrows of foxes or porcupines). Male shows no interest in young. F. libyca feeds mostly on great gerbil and Meriones meridianus. A dietary list is given on basis of analysis of 94 stomach contents and piles of feces; also given is a list of endo- and ectoparasites.--From abstr.

BIG GAME, GENERAL

Amon, Rudolf. (Ballhaugasse 3, Graz, Austria.) KLIMATISCHE GRENZEN EINER WIEDERANSIEDLUNG DES ALPENSTEINBOCKES IN DEN OSTALPEN. [CLIMATOLOGICAL LIMITS FOR RESTOCKING WITH IBEX.] Trans. 4th Congr. Intern. Union Game Biol., Arnhem/Oosterbeek. 28 Sept.-5 Oct. 1959. p. 171-177. 1960. WR 108: 33

In German with summaries in English and Dutch. Various January-isotherms act as limitations for the distribution of western and eastern animal stocks, clearly demonstrated by the differences in the population dynamics of two widely separated areas, stocked with about the same number of ibex. An increase to 300 individuals occurred in the area in which they were originally native compared with an increase to 41 in the area where they had not occurred in historical times.

Boback, Alfred Willy. WESTWANDERUNG VON ELCHEN, ALCES ALCES. [WESTWARD MIGRATION OF ALCES ALCES.] Säugetierk. Mitteil. 9(4): 159-162. 1 Oct. 1961. [From J. Mammal. 43(3), 1962.] WR 108: 33

[In German.]

Boch, J., W. Nerl, P. Hübl, and F. Feig. BISHERIGE ERFAHRUNGEN MIT NICOTINSALICYLAT ZUM EINFANGEN VON GAMS- , STEIN- UND ROTWILD. [RECENT DEVELOPMENTS IN THE USE OF NICOTINE SALICYLATE IN THE CAPTURE OF CHAMOIS, IBEX, AND RED DEER.] Z. Jagdwiss. 7(1): 18-25, 2 figs. Mar. 1961. WR 108: 33

In German with summaries in English and French. In using nicotine salicylate for capturing animals the following dosages are recommended: 9-10 mg/kg for chamois, 5-6 mg/kg for ibex and 15 mg/kg for red deer. Intermuscular injection, within a 70 m range, was obtained using a Cap-Chur gun.

Borg, Karl. (State Vet. Med. Inst., Stockholm, Sweden.) PREDATION ON ROE DEER IN SWEDEN. Trans. 5th Congr. Intern. Union Game Biol., Bologna. 4-10 Sept. 1961. p. 189-193. May 1962. WR 108: 33

In English with German and Italian summaries. Methods of killing of roe deer by dogs, foxes, lynxes, wolverines and eagles are compared and described. Fifteen per cent of roe deer mortalities found in Sweden during 1948 to 1961 were the result of predation.

Briedermann, L. UNTERSUCHUNGEN ÜBER DAS GAMSWILD IM ELBSANDSTEINGEBIET. [INVESTIGATIONS OF THE CHAMOIS IN THE ELBSANDSTEIN MOUNTAINS.] Z. Jagdwiss. 7 (4): 139-166, [8 figs.]. Dec. 1961. WR 108: 33

In German with summaries in English and French. A short geographical and climatological survey is given of the present chamois range. A review of the attempts to re-stock chamois between 1555 and 1690 is followed by a summary of present day efforts. A total population of about 140 animals was estimated in the spring of 1960. Weight and measurement charts are included.

Buechner, H. K. (Wash. State Univ., Pullman.) UNILATERAL IMPLANTATION IN THE UGANDA KOB. Nature 190(4777): 738-739. 20 May 1961. WR 108: 33

Chernyavskii, F. B. [MATERIALS ON THE BIOLOGY OF THE SNOW SHEEP (OVIS NIVICOLA ESCH.) IN THE KHORYASKY MOUNTAINS.] Bull. Moscow Obshch. Ispit. Prirody (Biol.) 66(6): 61-76. 1961. [From J. Mammal. 43(3), 1962.] WR 108: 33

In Russian with English summary.

Couturier, Marcel A. J. DÉTERMINATION DE L'ÂGE DU BOUQUETIN DES ALPES (CAPRA AEGAGRUS IBEX IBEX) À L'AIDE DES DENTS ET DES CORNES. [AGE DETERMINATION OF THE ALPINE IBEX (CAPRA AEGAGRUS IBEX IBEX) BY THE TEETH AND HORN METHODS.] Mammalia 25(4): 453-461. Dec. 1961. [From J. Mammal. 43(3), 1962.] WR 108: 33

[In French.]

Flerov, K. K. FAUNA OF USSR / MAMMALS. Vol. I, No. 2. MUSK DEER AND DEER. Acad. Sci. USSR (Moscow-Leningrad) New Ser. no. 55. iii + 257 p., 79 figs. 1952 [1960]. Published for the Natl. Science Foundation and the Smithsonian Institution by the Israel Program for Scientific Translations. [Available from the Office of Technical Services, U. S. Dept. Commerce, Washington 25, D. C. Price $2.75.] WR 108: 34

Translated from the Russian. This volume contains a review of the evolution of the Cervidae and a systematic section covering the families Moschidae and Cervidae. Keys are given for identification to genus and species and data included on the morphology and ecology of each animal.--W. T. Van Velzen.

Flerov, K. K., and M. A. Zablotskii. [ON THE CAUSATIVE FACTORS RESPONSIBLE FOR THE CHANGE IN THE BISON AREA.] Bull. Moscow Obshch. Ispit. Prirody (Biol.) 66(6): 99-109. 1961. [From J. Mammal. 43(3), 1962.] WR 108: 34

In Russian.

Forstner, M. J. ERFAHRUNGEN ÜBER DIE VERWENDUNG VON NARKOSEMITTELN BEIM EINFANGEN VON GAMSWILD. [EXPERIENCES ON THE USE OF NARCOSIS IN THE CAPTURE OF CHAMOIS.] Z. Jagdwiss. 8(2): 82-89, 5 figs. June 1962. WR 108: 34

In German with English and French summaries. A 30% solution of nicotine-salicylate (dosed at 3.4-4 mg/kg body weight) was diluted with 0.5 ccm combelene and 1 ccm narcorene. This reduced the original dose to half its potential and permitted repeat injection without toxic symptoms or high grade excitations. The duration of narcotic sleep was between one and two hours.

Gill, Janusz. (Zool. Garden, Warsaw, Poland.) DIE DURCHGANGSZEITEN DER NAHRUNG DURCH DEN VERDAUUNGSKANAL DES ELCHES. [THE RATE OF PASSAGE OF FOODSTUFFS THROUGH THE ALIMENTARY TRACT OF THE ELK.] Trans. 4th Congr. Intern. Union Game Biol., Arnhem/Oosterbeek. 28 Sept.-5 Oct. 1959. p. 155-164, 2 figs. 1960. WR 108: 34

In German with summaries in English and Dutch. Food passage needed 7-13 days in the elk (Alces alces). It could be concluded that with feeding once a day the food stays longer in the intestines and will therefore be better utilized; furthermore it appeared that older animals digest food better than young ones, while males are slower than females.--From summ.

Gill, Janusz. (Zool. Garden, Warsaw, Poland.) DIE DURCHGANGSZEITEN DER NAHRUNG DURCH DEN VERDAUUNGSKANAL UND DIE PHYSISCHEN EIGENSCHAFTEN DES KOTES BEIM ROTHIRSCH (CERVUS ELAPHUS L.). [THE RATE OF PASSAGE OF FOODSTUFFS THROUGH THE ALIMENTARY TRACT OF RED DEER (CERVUS ELAPHUS L.), AND SOME PHYSICAL CHARACTERISTICS OF THE FECES.] Trans. 5th Congr. Intern. Union Game Biol., Bologna. 4-10 Sept. 1961. p. 161-174, 6 figs. May 1962. WR 108: 34

In German with summaries in English and Italian. Studies of 3 captive red deer revealed that sex, kind of food, and season of the year did not have any marked effect upon the rate of passage of food through the alimentary tract, while both high nervous tension and changes in feeding schedules brought about great deviations in the rate of food passage.--From summ.

Hennig, R. ÜBER DAS REVIERVERHALTEN DER REHBÖCKE. [ON THE BEHAVIOR OF ROE BUCKS IN THE DISTRICT (Lerchenfed, Holstein).] Z. Jagdwiss. 8(2): 61-81, 1 fig. June 1962. WR 108: 34

In German with English and French summaries. A report of systematical observations on the behavior of roe bucks during 1961. All bucks aged two years or more defend a territory against other bucks until shortly before antlers are dropped. Territory size is dependent upon district conditions, population density and rank of the particular buck. This situation is somewhat broken down during the second part of rutting but is reestablished after rutting. The territorial behavior then slowly diminishes and during winter no territories are kept.

Hofmann, R. ZUR TOPOGRAPHIE DER EINGEWEIDE DES REHES (CAPREOLUS CAPREOLUS). 1. MITTEILUNG. DIE TOPOGRAPHIE DER HALS- UND BRUSTORGANE. [ON THE TOPOGRAPHY OF THE VISCERA OF THE ROE DEER (CAPREOLUS CAPREOLUS). SECTION I. THE TOPOGRAPHY OF THE ORGANS OF THE NECK AND CHEST.] Z. Jagdwiss. 8(2): 49-61. June 1962; and 8(3): 97-111, 13 figs. Sept. 1962. WR 108: 35

In German with English and French summaries. The topography of the organs of the neck and chest of the roe deer is described (with 13 sketches) using a preparation, in layers, from 9 formalin-fixed roes of different ages and sexes. A comparison is made of organ location in smaller ruminants for possible operations in pathological-anatomical investigations.

Jaczewski, Zbigniew, Wirgiliusz Zurowski, and Leon Zaniewski. (Polish Acad. Sci., Popielno, Poland.) REGULATION OF BLOOD PRESSURE IN THE GROWING ANTLERS OF RED DEER (CERVUS ELAPHUS L.). Trans. 5th Congr. Intern. Union Game Biol., Bologna, 4-10 Sept. 1961. p. 115-139, 18 figs. May 1962. WR 108: 35

In English with German and Italian summaries. A complement to an earlier paper by Jaczewski and Gill [WR 97: 38] on the regulation of blood pressure in red deer. Systolic blood pressure was found to be 42 mm Hg and diastolic blood pressure was 38.4 mm Hg. Asymmetry in antler growth and asynchronism in the shedding of velvet and the antlers may be explained by unilateral change of blood supply to the growing antlers. The effects of adrenaline and chloral hydrate were studied.

Jansen, J., Jr. (State Univ., Utrecht, Netherlands.) TRICHOSTRONGYLIDS IN THE FOURTH STOMACH OF ROE DEER AND RED DEER IN THE NETHERLANDS. Trans. 4th Congr. Intern. Union Game Biol., Arnhem/Oosterbeek, 28 Sept.-5 Oct. 1959. p. 91-95. 1960. WR 108: 35

In English with German and Dutch summaries. The relative importance of 16 spp. of trichostrongylids as parasites of the roe deer and red deer in the Netherlands is determined.

Krebs, Charles J., and I. McT. Cowan. (Univ. British Columbia, Vancouver.) GROWTH STUDIES OF REINDEER FAWNS. Canadian J. Zool. 40(5): 863-869, 1 fig. Sept. 1962. WR 108: 35

Abstract: A study of the growth of reindeer fawns was carried out during the spring and summer of 1958 in the Mackenzie Delta, N.W.T. Growth rates were obtained for four fawns under natural conditions. Early growth of the fawns (0-2 months) can usually be divided into three phases and some possible reasons for this are given. The rate of growth of reindeer fawns is slightly less than that of Columbian black-tailed deer fawns. Some weight data for different sex and age classes of wild reindeer are given, and it is concluded that the Mackenzie Delta reindeer do not differ greatly in growth pattern from Russian reindeer.

Mayer, H., and W. Nerl. DIE ÄSUNG DES GAMSWILDES / VEGETATIONSUNTERSUCHUNGEN IM RÄUDEGATTER DES STAATLICHEN FORSTAMTES RAMSAU. [THE GRAZING OF CHAMOIS / VEGETATION SURVEY WITHIN AN ENCLOSURE IN THE RAMSAU DISTRICT.] Z. Jagdwiss. 7 (3): 93-103. Oct. 1961. WR 108: 35

In German with summaries in English and French. The food of chamois was determined by means of vegetation tests within an enclosure. Definite food preferences were found and were considered important with regard to forest economics. To maintain a strong population of chamois it is suggested that they be restricted in numbers within widely spaced districts having an abundant basic food supply and offering little competition from red and roe deer.

Peek, James M. (Box 393, Ennis, Mont.) STUDIES OF MOOSE IN THE GRAVELLY AND SNOWCREST MOUNTAINS, MONTANA. J. Wildl. Mgmt. 26(4): 360-365. Oct. 1962. WR 108: 35

Data on reproduction, distribution, and calving of moose (Alces alces) in the Upper Ruby River drainage and adjacent areas of southwestern Montana were obtained during the summers and falls of 1958, 1959, and 1960. Cow-bull, cow-calf, and adult-yearling ratios were obtained from 779 moose observations. Factors influencing these observed ratios were discussed. Examination of 18

female and 17 male reproductive tracts as well as field observations were used to evaluate fecundity, extent of the breeding season, and status of yearling breeding. Movement information was obtained from 37 ear-tagged moose calves. Standard measurements and weights of nine moose calves were obtained.--From auth. abstr.

Philipowicz, I. (Sibiu, Rumania.) DAS ROTWILD DER OSTKARPATEN. [THE RED DEER OF THE EASTERN CARPATHIANS.] Z. Jagdwiss. 7(1): 1-18. Mar. 1961. WR 108: 36

In German with summaries in English and French. The red deer is separated into two types, the mountain and the country deer, differing in color and in body and antler size. Hybridization is well developed. The behavior and ecology are described for the different seasons. A table is given with measurements, weights, numbers of branches, and numbers of points for top trophy antlers.

Reinders, E. (Amerfoortseweg 1, Apeldoorn, Netherlands.) DAS ROTWILD IM KRONGUT 'HET LOO'. [THE RED DEER IN THE ROYAL PARK 'HET LOO'.] Trans. 4th Congr. Intern. Union Game Biol., Arnhem/Oosterbeek. 28 Sept.-5 Oct. 1959. p. 216-218. 1960. WR 108: 36

In German with summaries in English and Dutch. During the period 1921-1956 average body weights of red deer killed in the Royal Park 'Het Loo' have increased 24 kg and average antler weights have increased 1.1 kg. Management consisted of habitat improvement, importation of deer from other areas and reduction of overpopulation including an attempt "to get a sex ratio of 1 : 1.... According to Mr. Reinders the present very high quality should be accredited to crossbreeding, be it in close combination with selective shooting and improvements of the environment."--From summ.

Reydellet, Maurice. (Directeur des Services, Veterinaires, Gap (H. Alpes), France.) QUELQUES OBSERVATIONS SUR LE GIBIER EN MONTAGNE. [SOME OBSERVATIONS ON GAME OF THE MOUNTAINS.] Trans. 5th Congr. Intern. Union Game Biol., Bologna. 4-10 Sept. 1961. p. 194-198, 2 figs. May 1962. WR 108: 36

In French with German and Italian summaries. Includes notes on acclimatization of moufflon and ibex in the French Alps, and miscellaneous notes on the chamois.

Rieck, Walter. (Univ. Göttingen, Hann. Münden, Germany.) GRUNDLAGEN DER JAGDLICHEN BEHANDLUNG DES REHWILDES. [PRINCIPLES OF ROE DEER MANAGEMENT.] Trans. 4th Congr. Intern. Union Game Biol., Arnhem/Oosterbeek. 28 Sept.-5 Oct. 1959. p. 178-187, 1 fig. 1960. WR 108: 36

In German with English and Dutch summaries. The history of roe deer management in central Europe is reviewed. The two theories as to the causes of poor antler development (food shortage and hereditary factors) are compared. From the evidence, the decline in antler size is the result of overpopulation. Eradication of large beasts of prey by 1750, sparing of the ♀ roe, the shooting preserve law (1935), and the consistently low estimates of annual population increase "led to overpopulation which resulted in food shortage, in nervous tension because animals from different territories went feeding to and fro and a greater susceptibility to parasites.... All this leads to the conclusion that a reduction of the population density of roes is essential."--From summ.

Shaldibin, L. S. [DATA ON THE EPIZOOTIOLOGY OF SOME HELMINTHS OF ELK.] Uchenie Zapiski Gorkovski Gosudarstvenni Pedagog. Inst. 19: 57-63. 1957. [Listed in Helminthol. Abstr. 30(4), 1961.] WR 108: 36

[In Russian.]

Sokolov, I. I., and V. L. Rashek. [THE DEVELOPMENT OF TEETH AND SKULL AS INDICES OF AGE IN SAIGA TATARICA L.] Bull. Moscow Obshch. Ispit. Prirody (Biol.) 66(6): 77-98. 1961. [From J. Mammal. 43(3), 1962.] WR 108: 36

In Russian with English summary.

Szederjei, Akos. (Inst. Forstwiss., Budapest, Hungary.) ROTWILDWANDERUNGEN. [THE WANDERINGS OF THE RED DEER.] Z. Jadgwiss. 8(3): 111-123, 6 figs. Sept. 1962. WR 108: 37

In German with English and French summaries. The wanderings of red deer in Hungary were recorded by a net of observers. The methods used and results obtained are reported. Large herds migrated faster than small herds. Sixty to ninety per cent of the large herds (compared to twenty to thirty per cent of the smaller herds) returned to their native haunts. Males remained in new areas more often than females. The sex ratio averaged 3 : 1; however, in large herds it was 2 : 3. The two types of Hungarian red deer are described.

Tarczynski, S. PARASITIC WORMS OF SWINE AND WILD BOARS IN POLAND. Acta Parasitol. Polonica 4(20): 663-750. 1956. Photocopies of 67 p. transl. [1962] may be ordered from the Natl. Agr. Library, USDA, Washington 25, D. C. [From Bibliog. Agr. 26(11), 1962.] WR 108: 37

Tratz, Eduard Paul. NEUE NACHWEISE FÜR DAS EHEMALIGE VORKOMMEN DES STEINWILDES (CAPRA IBEX IBEX) IN SALZBURG. [NEW INFORMATION ON THE FORMER OCCURRENCE OF THE IBEX (CAPRA IBEX IBEX) IN SALZBURG.] Säugetierk. Mitteil. 9 (4): 163. 1 Oct. 1961. [From J. Mammal. 43(3), 1962.] WR 108: 37
[In German.]

Türcke, Friedrich. (Springer, Deister, Germany.) ERFAHRUNGEN UEBER DIE NATÜRLICHE UND KÜNSTLICHE ERNAHRUNG DES WILDES IM FORSTAMT SAUPARK. [EXPERIENCES FROM NUTRITION-PHYSIOLOGY WITH GAME IN THE SAUPARK-RESERVATION.] Trans. 5th Congr. Intern. Union Game Biol., Bologna. 4-10 Sept. 1961. p. 140-148. May 1962. WR 108: 37

In German with English and Italian summaries. Observations on the artificial and natural food conditions of a 1600 hectare reservation containing 300 wild boar, 140 fallow deer and 12 moufflon. Beechnuts had little influence on antler development of fallow deer, but game-meadows were very important. Formulae are given for supplementary diets for fallow deer and the moufflon. These diets are necessary when natural foods are depleted.--From summ.

Uloth, Walter. ERFOLGREICHE KREUZUNG DES MOUFFLONS (OVIS AMMON MUSIMON) MIT VERWILDERTEN HAUSSCHAFEN (O. A. ARIES) DES MAUNA-KEA-GEBIETES AUF HAWAII. [THE SUCCESSFUL CROSSING OF THE MOUFFLON (OVIS AMMON MUSIMON) WITH FERAL SHEEP (O. A. ARIES) AT MAUNA KEA, HAWAII.] Säugetierk. Mitteil. 9(4): 162-163, illus. 1 Oct. 1961. [From J. Mammal. 43(3), 1962.] WR 108: 37
[In German.]

Valentincic, Stane. (Ljubljana, Jugoslavia.) KOMPARATIVE STUDIE EINIGER REPRODUKTIONSERSCHEINUNGEN BEIM ROTWILD DES ALPEN- UND AU-GEBIETES. [COMPARISON OF REPRODUCTION PHENOMENA OF RED DEER.] Trans. 4th Congr. Intern. Union Game Biol., Arnhem/Oosterbeek. 28 Sept.-5 Oct. 1959. p. 188-197. 1960. WR 108: 37

In German with summaries in English and Dutch. Jugoslavian red deer from lowland area characterized by mixed oak and white beech are compared with those of alpine area characterized by scots pine, beech with dwarf-pines and mountain pastures. Full grown red deer from the lowland area were much heavier, and this is ascribed to better food conditions. Of 99 does and 23 yearlings investigated in the lowlands, 97 and 7 respectively were with young; for the other area, figures were: 46 and 9 investigated, 40 and 0 with young. Sex ratios of embryos for the two areas are compared.--From summ.

von Braunschweig, A. (Vet.-Path. Inst., Frankfurterstrasse 94, Giessen, Germany.) BEITRAG ÜBER DAS AUSWACHSEN DER SCHALEN BEIM WILD. [THE ABNORMAL GROWTH OF HOOVES IN GAME.] Z. Jagdwiss. 8(1): 19-26, 5 figs. Mar. 1962. WR 108: 37

In German with English and French summaries. The causes of outgrowing hooves, occurring in all ungulates, are generally considered to be unsuitable soils, chronic diseases and injuries. In the case of roe deer metabolism, disturbances and hyperheratosis are also suspected agents. Examination of several cases of outgrowing hooves support the above theories.

Vos, A. de. (Ontario Univ., Ontario, Canada.) BEHAVIOUR OF BARREN-GROUND CARIBOU ON THEIR CALVING GROUNDS. Trans. 4th Congr. Intern. Union Game Biol., Arnhem/Oosterbeek. 28 Sept.-5 Oct. 1959. p. 165-170. 1960. WR 108: 38

In English with German and Dutch summaries. "Studies were made of the behavior of barren-ground caribou on their calving grounds in Mackenzie and Keewatin Districts, Northwest Territory, between May 22 and July 6, 1958. An absence of leadership was noticeable. Bands ranging in size from 2 to 5 were observed most frequently. Most bands on calving grounds consisted largely of pregnant females. The majority of calves were born in 'calving bands'. The peak of calving was estimated to have occurred around June 12. As calving was progressing migratory behavior was gradually replaced by a drifting movement. By late June caribou became increasingly restless. The inter-relationship between a cow and her calf gradually lessened after birth. Calves four days old and older moved widely through a band. Daily activity reached peaks in morning and afternoon. An undisturbed large band seemed to have a rather regular pattern of activity and resting periods. Calves bedded significantly more than cows. Vocal activity increased with the state of excitation and indecision. Limited calf mortality resulted from cows killing strange calves. Cows with calves were alerted more readily than calfless individuals."

Walvius, M. R. A DISCUSSION OF THE SIZE OF RECENT RED DEER (CERVUS ELAPHUS L.) COMPARED WITH PREHISTORIC SPECIMENS. Beaufortia, Zool. Mus. (Amsterdam) 9(97): 75-82. 12 Nov. 1961. [From J. Mammal. 43(3), 1962.] WR 108: 38

Whitehead, G. Kenneth. (Withnell Fold, Chorley, Lancashire, England.) SAVING THE STEINBOCK FROM EXTINCTION. Trans. 4th Congr. Intern. Union Game Biol., Arnhem/Oosterbeek. 28 Sept.-5 Oct. 1959. p. 198-200, 1 fig. 1960. WR 108: 38

In English with summaries in German and Dutch. Although formerly ranging through the Alps of France, Switzerland, Germany, Austria and Italy, the steinbock became extinct in all those countries except Italy. The population varied from a low of 500 animals in 1836 to 6,000 in 1914, and underwent many fluctuations during the following years, according to the amount of protection provided. Re-introduction into Switzerland started in 1911 and the present day herd numbers about 1562 animals. Re-introductions have also been made in Yugoslavia.

DEER (Odocoileus)

Agrons, B. Z. IN CALIFORNIA'S REDWOOD REGION, DEER DO DAMAGE TO PLANTED DOUGLAS FIRS. Western Conserv. J. 19(2): 50-53. Mar.-Apr. 1962. [From Bibliog. Agr. 26(10), 1962.] WR 108: 38

Anderson, Roy C. (Ontario Res. Found., Toronto.) THE PARASITES (HELMINTHS AND ARTHROPODS) OF WHITE-TAILED DEER. Proc. First Natl. White-tailed Deer Disease Symposium. p. 162-173. Feb. 1962. WR 108: 38

About 66 helminth and arthropod parasites are reported in the literature on white-tailed deer, most of which are also found in other ungulates. It is concluded that parasites play an important role in causing disease and mortality but generally in consort with other factors such as malnutrition and exposure.--From summ.

Barber, Harold L. "BROWSE" STUDY SHOWS FOOD AVAILABILITY FOR HERDS. Ky. Happy Hunting Ground 18(5): 4-6, illus. Sept. 1962. WR 108: 38

Browse index ratings for 1962 are given for 13 study areas of Ky. and compared with ratings of 1960 and 1961. The preferred foods proved to be: strawberry-bush, greenbrier, trumpet vine, grape, black locust, redcedar, sumac, rose, blackberry, and viburnum.

Case, Arthur A., and D. A. Murphy. (Univ. Mo., Columbia.) POISONING IN WHITE-TAILED DEER. Proc. First Natl. White-tailed Deer Disease Symposium. p. 128-131. Feb. 1962. WR 108: 39

Little is known about the incidence of toxicosis among deer populations, but it may be more of a problem than is generally realized. Deer eat a variety of plant foods, seldom eating much of one food at a time, and the danger of plant poisoning may be thus restricted.

Chase, Warren W., and David H. Jenkins. (Univ. Mich., Ann Arbor.) PRODUCTIVITY OF THE GEORGE RESERVE DEER HERD. Proc. First Natl. White-tailed Deer Disease Symposium. p. 78-88, 4 figs. Feb. 1962. WR 108: 39

The deer population on the fenced 1,200-acre George Reserve was held at a prefawning population of 56 animals during the last 19 years. An average of 39% of the early fall herd was removed each year, with a total of 716 animals removed. Of the 716 animals, 397 were males and 319 females.

Chatham, Thomas West. A STUDY OF AN OVER POPULATION OF DEER ON THE RED DIRT GAME MANAGEMENT AREA, NATCHITOCHES PARISH, LOUISIANA. M.S. thesis, La. State Univ. 1959. [Osborn and others. Forest Sci. 8(3), 1962.] WR 108: 39

Clark, Carl H. (Auburn Univ., Auburn, Ala.) GENERAL DEFINITION OF DISEASE. Proc. First Natl. White-tailed Deer Disease Symposium. p. 115-116. Feb. 1962. WR 108: 39

Most diseases occurring in deer as well as other animals are a complex of interrelated factors such as poor nutrition, hereditary susceptibility, bacteria, and environmental exposure.--From summ.

Cowan, Robert L. (Pa. State Univ., University Park.) PHYSIOLOGY OF NUTRITION AS RELATED TO DEER. Proc. First Natl. White-tailed Deer Disease Symposium. p. 1-8, 1 fig. Feb. 1962. WR 108: 39

Food digestion in deer is essentially the same as in domestic ruminants, but deer have physiological peculiarities and differences in feeding habits which make their nutrition unique. Seasonal changes in endocrine activity appear to bring about changes in appetite coinciding with reduction in quantity and quality of food, and these changes may be inherited adaptations to the inadequate diets normally obtained by deer in winter.

Cowan, R. L., and T. A. Long. (Pa. State Univ., University Park.) STUDIES ON ANTLER GROWTH AND NUTRITION OF WHITE-TAILED DEER. Proc. First Natl. White-tailed Deer Disease Symposium. p. 54-60, 2 figs. Feb. 1962. WR 108: 39

Body growth and energy requirements took precedence over antler growth in utilization of available nutrients. Since antler growth depended on a surplus of nutrients above other body needs, the size of antlers was influenced by general nutrition and availability of food. Calcium and phophorus requirements were interrelated. Deer developed antlers when fed a diet containing 0.09% calcium and 0.60% phosphorus, but four failed to survive on a diet containing 0.09% calcium and only 0.25% phosphorus. Best antler growth was obtained on the complete ration containing 0.64% calcium and 0.56% phosphorus. Survival in poor condition with stunted antler growth occurred on rations containing 0.25% calcium and 0.30% phosphorus.

Davis, Robert W. (Colo. State Univ., Fort Collins.) STUDIES ON ANTLER GROWTH IN MULE DEER (ODOCOILEUS HEMIONUS HEMIONUS, RAFINESQUE). Proc. First Natl. White-tailed Deer Disease Symposium. p. 61-64, 2 figs. Feb. 1962. WR 108: 39

A study on the structure and growth of the deer antler. Investigations were carried out regarding the factors influencing osteogenic activity of the antler.

Dietz, Donald R., Robert H. Udall, and Lee E. Yeager. (Colo. State Univ., Fort Collins.) DIFFERENTIAL DIGESTIBILITY OF NUTRIENTS IN BITTERBRUSH MOUNTAINMAHOGANY, AND BIG SAGEBRUSH BY DEER. Proc. First Natl. White-tailed Deer Disease Symposium. p. 39-53. Feb. 1962. WR 108: 40

Sagebrush, bitterbrush, and mountainmahogany were fed to four mule deer fawns both singly and in combination with alfalfa pellets. Bitterbrush and alfalfa were more palatable to the deer than mountainmahogany or sagebrush. The deer either gained or maintained their weight on all feeding combinations except that with sagebrush. This indicated need for other browse species on sagebrush ranges.

Duvendeck, Jerry P. (Mich. Dept. Conserv., East Lansing.) THE VALUE OF ACORNS IN THE DIET OF MICHIGAN DEER. J. Wildl. Mgmt. 26(4): 371-379, 3 figs. Oct. 1962. WR 108: 40

To investigate the food value of acorns to deer, penned white-tailed deer were fed various acorn supplemented browse food diets during 3 winter periods. Daily food intake per 100 lb body weight of deer receiving a free choice diet of good food and acorns was approximately 4 lb fresh weight, of which 1.5 lb were acorns. A daily supplement of 0.5 lb of acorns per 100 lb body weight was necessary to sustain deer fed poor browse foods for a 90 day winter period. White oak acorns were apparently more palatable than red oak acorns, but weight loss was not significantly different between two groups of deer, one receiving white oak acorns, the other red oak acorns, as a supplement to a poor browse food diet. Deer entering a winter in excellent condition may be better able to resist a critical winter weight loss than animals that are in poorer, lighter condition. Preference for a specific browse species by some deer different from the preference shown by other deer was observed.--Auth. abstr.

Dyk, V. DIE HERAUSBILDUNG DER SCHMAROTZERFAUNA DES MUFFELWILDES IN DER ČSSR UND IHRE BEZIEHUNGEN ZUM ÜBRIGEN WILDE UND ZU WEIDERIEREN. [THE BUILD-UP OF THE PARASITIC FAUNA OF THE MOUFLON IN CZECHOSLOVAKIA AND ITS RELATION TO DEER AND DOMESTIC LIVESTOCK.] Angew. Parasitol. (Jena) 2(1): 26-28, (2): 44-48. 1961. [From abstr. in Helminthol. Abstr. 31(1), 1962.] WR 108: 40

[In German with English and Russian summaries.] Dyk discusses the introduction of Ovis musimon into Czechoslovakia and draws attention to the number of parasites found in these wild sheep. He has compiled a list of 36 species of parasites recorded from the mouflon, and he remarks upon the possibility of cross infections occurring between domestic sheep, deer, and wild sheep. He discusses the control measures by which loss in domestic sheep and deer can be prevented.

Eberhardt, L. L. EVALUATION OF VITAL CHARACTERISTICS OF MICHIGAN DEER HERDS. Ph.D. thesis, Mich. State Univ. 1960. [Osborn and others. Forest Sci. 8(3), 1962.] WR 108: 40

Fay, L. Dale. (Rose Lake Wildl. Expt. Sta., E. Lansing, Mich.) NEOPLASTIC DISEASES OF WHITE-TAILED DEER. Proc. First Natl. White-tailed Deer Disease Symposium. p. 132-137. Feb. 1962. WR 108: 40

Malignant neoplasms leading to fatality are rare, the benign fibroma being more prevalent among deer neoplasms. Deer fibromatosis is transmissible and is caused by a virus specific for deer. Deer probably recover from fibromatosis. --From summ.

Flyger, Vagn F. (Nat. Resources Inst., Univ. Md., Annapolis.) ANOMALIES OF DEER. Proc. First Natl. White-tailed Deer Disease Symposium. p. 117-119. Feb. 1962. WR 108: 40

A table is given citing 24 anomalies recorded in the literature.

Flyger, Vagn, and Theodore Thoerig. (Nat. Resources Inst., Univ. Md., Annapolis, Md.) PRELIMINARY REPORT ON A NEW PRINCIPAL FOR PREVENTION OF CROP DAMAGE BY DEER. Proc. 15th Ann. Conf. SE Assoc. Game & Fish Comms. p. 119-122. 1961 [1962]. WR 108: 41

The construction and use of booby traps for the prevention of deer damage is discussed. Advantages and disadvantages of various devices are pointed out. --W. T. Van Velzen.

Goodrum, Phil D., and Vincent H. Reid. (Sport Fisheries & Wildl., Nacogdoches, Texas.) BROWSING HABITS OF DEER IN THE WESTERN GULF REGION. Proc. First Natl. White-tailed Deer Disease Symposium. p. 9-14. Feb. 1962. WR 108: 41

Fifty-eight browse species are classified as high-, medium-, or low-choice. The number of deer in the fall population was closely related to the degree of browsing of the high choice plants. Late summer as well as winter may be a critical period for deer in the southeastern states.

Guilday, John. (Carnegie Museum, Pittsburgh, Pa.) THE DEER OF 350 YEARS AGO. Pa. Game News 33(12): 10-13. Dec. 1962. WR 108: 41

Excavations from an Indian village occupied during 1600-1625 A.D. yielded a collection of 188 right mandibles of deer. Age determinations (at time of death) were possible from 182 of the mandibles. Of the 182 animals, 70% were 4.5 years old or less; of antlered deer shot by hunters in 1958, 96% were 4.5 years old or less; of does sampled in 1958, 85% were 4.5 years old or less. It was pointed out that the Indian-collected sample was not taken at random, and it was indicated that preference may have been shown for deer 2-4 years old.

Hines, William W., and Carl W. Smith. AN ACCOUNT OF THE RELATIONSHIP OF BLACKTAIL DEER TO THE PROPAGATION OF DOUGLAS FIR SEEDLINGS. Oreg. State Game Comm. Bull. 9(17): 3, 6, 8. Sept. 1962. WR 108: 41

In a study to evaluate the interrelationships between deer and trees in a specific location, deer were penned in enclosures which had been planted to Douglas fir seedlings. With 43 deer (8 acres/animal) 45% damage was assessed, while with 15 deer (22 acres/animal) 6.9% damage occurred. A population reduction of two-thirds produced nearly a ninefold decrease in damage thus indicating that the amount of deer damage on conifers is not in direct proportion to animal density.--W. T. Van Velzen.

Karstad, Lars. (Ontario Vet. Coll., Guelph, Ontario.) VIRAL AND RICKETTSIAL DISEASES OF DEER: A REVIEW. Proc. First Natl. White-tailed Deer Disease Symposium. p. 138-144. Feb. 1962. WR 108: 41

The following viral diseases have been reported in white-tailed deer: epizootic hemorrhagic disease, mucosal disease, vesicular stomatitis, foot-and-mouth disease, rabies and viral tumors. Malignant catarrh, tick-borne encephalitis and pseudorabies have not been reported but are possibilities. Rinderpest has not yet occurred in North America but is to be expected in connection with importation of wild or domestic animals. No rickettsial agents have been isolated from white-tailed deer.

Kitchen, Hyram, and William R. Pritchard. (Univ. Fla., Gainesville.) PHYSIOLOGY OF BLOOD. Proc. First Natl. White-tailed Deer Disease Symposium. p. 109-114, 2 figs. Feb. 1962. WR 108: 41

No evidence was found that sickling of red blood cells was associated with a diseased condition of deer, although the sickling process in man has been associated with a disease process.

Kozlovskii, A. A. [ELKS AND FORESTRY.] Priroda (Moscow) 1962(6): 99-101. June 1962. [From Bibliog. Agr. 26(10), 1962.] WR 108: 41

In Russian. Chiefly control.

Longhurst, W. M., M. B. Jones, R. R. Parks, L. W. Neubauer, and M. W. Cummings. FENCES FOR CONTROLLING DEER DAMAGE. Calif. Agr. Expt. Sta., Ext. Serv. Circ. 514. 17 p., illus. June 1962. WR 108: 42

Properly constructed fences generally give the only sure, lasting protection against deer damage to agricultural crops, gardens and timber reproduction areas. Plans, with illustrations, are given for upright, slanting and electric fences as well as methods for deer-proofing existing fences. Deer guards for traffic lanes, protective cages for trees or vines and drainage structures are also shown.--W. T. Van Velzen.

Lord, Rexford D. (Ill. Nat. Hist. Surv., Urbana.) AGING DEER AND DETERMINATION OF THEIR NUTRITIONAL STATUS BY THE LENS TECHNIQUE. Proc. First Natl. White-tailed Deer Disease Symposium. p. 89-93. Feb. 1962. WR 108: 42

A growth curve of the lens of the eye of white-tailed deer was constructed from data obtained from 17 deer of known age and 290 with ages determined from the teeth. A difference was noted in the growth rate of the lens between wild- and captive-raised deer. The difference was attributed to nutritional differences, and it was suggested that the lens technique may provide a method for determining nutritional status of deer.--From summ.

Lund, Horace O., Charles M. Marshall, and Frank A. Hayes. (Univ. Ga., Athens.) THE OCCURRENCE OF IXODES AFFINIS NEUMANN ON BLACKBEARD ISLAND, GEORGIA. Proc. Entomol. Soc. Wash. 64(2): 105-106. June 1962. WR 108: 42

A sample of 16 ticks taken from an adult ♂ deer on 29 Sept. 1960, were identified as Ixodes affinis. Of 33 ticks taken from 9 deer examined for ectoparasites in Jan. 1962, 24 were Ixodes scapularis and 9 were Amblyomma americanum. No additional specimens of I. affinis have been found on deer or dogs since 1960.--W. T. Van Velzen.

Mangold, Robert E. (396 S. Green St., Tuckerton, N. J.) DEER DATA / AGE, WEIGHT AND REPRODUCTION OF THE WHITE-TAIL. N. J. Outdoors 13(6): 3-13, 9 figs. Dec. 1962. WR 108: 42

This article represents a praiseworthy attempt to make available to the public results of deer research in N. J. In northern N. J. about 93% of 1,381 ♂♂ and in southern N. J. 71% of 1,485 were 1.5 to 2.5 years old. In northern N. J. about 72% of 4,040 adult ♀♀ and in southern N. J. 60% of 620 were 1.5 to 2.5 years old. The ratio of fawns to adults was 103:100 in northern N. J. and 69:100 in southern N. J. The heaviest deer, a 4.5-year-old ♀, weighed 149 pounds when hog-dressed. In 1,184 adult ♀♀ checked in northern N. J., 1.79 fetuses per ♀ were found; in 395 checked in southern N. J., 1.54 were found.

Murphy, Dean A. DEER HARVESTS FROM REFUGE AREAS IN MISSOURI. Proc. 15th Ann. Conf. SE Assoc. Game & Fish Comms. p. 37-42, 1 fig. 1961 [1962]. WR 108: 42

Deer harvest figures are tabulated for five refuges. With hunting pressures as high as 200 hunters/square mile, harvests as high as 99 deer/square mile were taken. Opening day bow hunting pressure was 178 hunters/square mile with a harvest of 26 deer/square mile.--From auth. summ.

Nordan, H. C., A. J. Wood, and I. McT. Cowan. (Univ. British Columbia, Vancouver.) FURTHER STUDIES ON THE IMMOBILIZATION OF DEER WITH SUCCINYLCHOLINE. Canadian J. Comp. Med. & Vet. Sci. 26(10): 246-248, 1 fig. Oct. 1962. WR 108: 42

[See Cowan et al., WR 106: 47, for earlier studies.] The dosage required for complete immobilization of deer (Odocoileus) was 0.06 mg/kg body weight (0.027 mg/pound). This level induced full effects within two to ten minutes of administration (intramuscular) and caused immobilization for periods ranging between eight and thirty minutes. No harmful side effects have been noted on sequential administration of this compound at monthly intervals.--From abstr.

Petraborg, Walter H., and Vernon E. Gunvalson. (Minn. Div. Game & Fish, St. Paul.) OBSERVATIONS ON BOBCAT MORTALITY AND BOBCAT PREDATION ON DEER. J. Mammal. 43(3): 430-431, 2 figs. Aug. 1962. WR 108: 43

Bobcat signs and movements recorded from 1948 to 1954 indicate that bobcats suffer winter losses from starvation similar to deer. Severe winter conditions force bobcats to leave their normal territories, resulting in an abnormal loss due to trapping, shooting, and starvation. Twelve authenticated reports of bobcats killing deer were received from 1948 to 1952.--W. T. Van Velzen.

Pier, Allan C. (Natl. Animal Disease Lab., Ames, Iowa.) MYCOTIC DISEASES OF DEER. Proc. First Natl. White-tailed Deer Disease Symposium. p. 151-154. Feb. 1962. WR 108: 43

A deer with a highly infective skin fungus was reported from New York. Subcutaneous mycoses, caused by Actinomyces bovis, are the most common of the mycotic diseases. Aspergillus fumigatus was found in one deer. Pathogenic fungi are a minor cause of diseases among deer.

Quick, Horace F. (Univ. Maine, Orono.) POPULATION DYNAMICS OF WHITE-TAILED DEER. Proc. First Natl. White-tailed Deer Disease Symposium. p. 65-77, 6 figs. Feb. 1962. WR 108: 43

Since maintenance of a population is dependent on reproductive rate and life expectancy, ability of a population to maintain itself can be estimated with use of life tables. Some ♀♀ are bred at 6 months of age, the number being influenced by the number of adult ♀♀ in the population. The adult ♀♀ are bred first, and when the adult segment of the ♀ population is low, a higher proportion of the young are bred. When the population of adult ♀♀ is reduced by hunting, more young ♀♀ are likely to be bred.

Roth, Earl E. (La. State Univ., Baton Rouge.) BACTERIAL DISEASES OF WHITE-TAILED DEER. Proc. First Natl. White-tailed Deer Disease Symposium. p. 145-150. Feb. 1962. WR 108: 43

Mycobacterium bovis, Listeria monocytogenes, Clostridum chauvei, Clostridium septicum, Leptospira pomona and Salmonella typhimurium have been isolated from white-tailed deer, and deer have been artificially infected with Brucella abortus. Anthrax, vibriosis, actinobacillosis, and Johne's disease--diseases commonly found among domestic animals--were not reported in white-tailed deer.

Severinghaus, C. W. (N. Y. State Conserv. Dept., Delmar.) THE FUTURE FOR DEER IN NEW YORK. [N.Y.] Conservationist 17(2): 2-4, illus. Oct.-Nov. 1962. WR 108: 43

Although a state-wide total harvest of 41,367 antlered deer was made in 1957, the average take between 1949 and 1958 was only 33,678. The picture of future deer populations is one of decline due to reduced food supply as a result of less abandonment of farmland in recent years which in the past provided an optimum amount of good deer browse-producing land.--W. T. Van Velzen.

Sewell, Raymond F. (Univ. Ga., Athens.) NUTRITIONAL DISEASES. Proc. First Natl. White-tailed Deer Disease Symposium. p. 120-127. Feb. 1962. WR 108: 43

The most common nutritional disease of deer is that of malnutrition resulting primarily from deficient energy intake. Protein and vitamin A deficiency may also be critical under some conditions. Mineral deficiency would probably not occur where the quantity and quality of browse are sufficient to meet other nutritional requirements. Malnutrition is primarily a problem of over-population of deer ranges and may be further complicated by adverse climatic conditions and by competition for the available food from other species on the range.--From summ.

Southeast Section, Wildlife Society. PROCEEDINGS OF THE FIRST NATIONAL WHITE-TAILED DEER DISEASE SYMPOSIUM. (Athens, Ga., 13-15 Feb. 1962.) x + 202 p. 1962. Price $4.00. WR 108: 44

Contains 21 technical papers (with the associated discussion), a valuable 23-page collective bibliography plus introductory and summary papers. The individual technical papers are listed separately in this issue of WR. These proceedings are as E. L. Cheatum mentions in the proceedings' summary: "A valuable reference work and take-off point for reorientation of many deer investigation projects in the United States and in the Canadian provinces."

Trainer, Daniel O. (Univ. Wis., Madison.) PROTOZOAN DISEASES OF WHITE-TAILED DEER (ODOCOILEUS VIRGINIANUS). Proc. First Natl. White-tailed Deer Disease Symposium. p. 155-161. Feb. 1962. WR 108: 44

Four protozoan diseases--sarcosporidiosis, toxoplasmosis, piroplasmosis and anaplasmosis--are discussed. Little work has been done on protozoan diseases of white-tailed deer, and this report is largely a speculative application to the white-tailed deer of known facts on other species.

Trodd, L. L. (Dept. Lands & Forests, Sudbury, Ontario.) QUADRUPLET FETUSES IN A WHITE-TAILED DEER FROM ESPANOLA, ONTARIO. J. Mammal. 43(3): 414. Aug. 1962. WR 108: 44

Quadruplet fetuses were taken from an automobile-killed doe on 1 June 1961. The mild winter of 1960-61 followed two severe winters and multiple births could be expected to be common. Three fetuses were males weighing 7.9, 5.8, and 5.3 pounds. The smallest, a female, weighed 4.0 pounds.--W. T. Van Velzen.

Verme, Louis J. (Mich. Dept. Conserv., Shingleton.) MORTALITY OF WHITE-TAILED DEER FAWNS IN RELATION TO NUTRITION. Proc. First Natl. White-tailed Deer Disease Symposium. p. 15-38, 8 figs., 2 pls. Feb. 1962. WR 108: 44

Captive deer in Mich. were fed during the winter and spring on diets classified as of high, moderate, and low nutritive levels. The high level diet consisted of browse supplemented with deer pellets; the moderate diet consisted only of browse of high quality; the low level diet consisted only of browse of poor quality. The browse classified as high quality consisted of cedar (Thuja occidentalis), hemlock (Tsuga canadensis), red maple (Acer rubrum), and sugar maple (Acer saccharum). The low quality diet consisted of balsam fir (Abies balsamea), trembling aspen (Populus tremuloides), black spruce (Picea mariana), and black alder (Alnus incana). Does fed high or moderate quality diets produced large and healthy fawns, and the loss of fawns from nutritional deficiencies was only 7%. A low quality winter diet in combination with a high quality spring diet was followed by early death of more than a third of the fawns produced. The mortality rate increased to more than 50% and 90%, respectively, when the low winter diet was followed by feeding of moderate and low quality spring rations.

Verme, Louis J. (Mich. Dept. Conserv., Shingleton.) AN AUTOMATIC TAGGING DEVICE FOR DEER. J. Wildl. Mgmt. 26(4): 387-392, 2 figs. Oct. 1962. WR 108: 44

By means of a modified snare, deer tag themselves with a 22-inch identification collar that locks securely around the neck. The construction and operation of the device make strangulation of tagged deer virtually impossible. Approximately 419 white-tailed deer (Odocoileus virginianus) have been marked in Mich. with automatic tagging devices used in winter. In one field-trial, 622 devices were set and approximately 343 deer were self-tagged, a success rate of about 0.55 deer per set. Preliminary tests showed that the probability of reliably tagging snared deer ran as high as 66%. Principle, materials, and setting techniques of the contrivance are described. Important features of this automatic tagging device are its economical construction, simplicity of operation, and high efficiency.--Author.

Verme, Louis J., L. Dale Fay, and Ulreh V. Mostosky. (Mich. Dept. Conserv., Shingleton.) USE OF X-RAY IN DETERMINING PREGNANCY IN DEER. J. Wildl. Mgmt. 26(4): 409-411. Oct. 1962. WR 108: 45

The feasibility of radiographic detection of pregnancy to determine fetus: doe ratios in white-tailed deer (Odocoileus virginianus) was studied in 94 doe deer, 27 dead and 67 alive. Deer examined carried fetuses ranging from 66 to 150 days old. The study indicated that pregnancy and the number of young can be determined by X-ray with considerable certainty from the mid-point (100th-day) of gestation onward. In good quality radiographs, fetal counts may be reasonably valid as early as the 85th day. X-ray equipment and techniques for making pregnancy examinations are described.--L. J. Verme.

Welch, Bruce L. (Duke Univ., Durham, N. C.) ADRENALS OF DEER AS INDICATORS OF POPULATION CONDITIONS FOR PURPOSE OF MANAGEMENT. Proc. First Natl. White-tailed Deer Disease Symposium. p. 94-108. Feb. 1962. WR 108: 45

Adrenals were larger on a densely populated than a sparsely populated deer range. Adrenal size and population density showed parallel increases from one hunting season to the next.

MAMMALS--MARINE

Carrick, R., and Susan E. Ingham. (Wildl. Surv. Sec., C.S.I.R.O., Canberra, Australia.) STUDIES ON THE SOUTHERN ELEPHANT SEAL, MIROUNGA LEONINA (L.). I. INTRODUCTION TO THE SERIES. C.S.I.R.O. Wildl. Res. 7(2): 90-101, 1 fig. + 2 pls. Aug. 1962. WR 108: 45

Summary: The historical and geographical status of the southern elephant seal, Mirounga leonina (L.), are discussed, and the effects of commercial sealing operations are described. Research on M. leonina and on the northern elephant seal, M. angustirostris Gill, is briefly reviewed. An outline is given of the field techniques and of the ecological and related studies at Heard Island and Macquarie Island, based on the individual branding of 6852 pups during 1949-1961 by the Australian National Antarctic Research Expeditions.

Carrick, R., and Susan E. Ingham. (Wildl. Surv; Sec., C.S.I.R.O., Canberra, Australia.) STUDIES ON THE SOUTHERN ELEPHANT SEAL, MIROUNGA LEONINA (L.). II. CANINE TOOTH STRUCTURE IN RELATION TO FUNCTION AND AGE DETERMINATION. C.S.I.R.O. Wildl. Res. 7(2): 102-118, 1 fig. + 8 pls. Aug. 1962. WR 108: 45

Summary: The gross structure of the canine teeth of Mirounga leonina (L.) is discussed in relation to their function as weapons of aggression. Silver nitrate staining of sections of teeth of known age up to 8 years old in each sex reveals bands of columnar dentine deposited during pregnancy, foetal life, lactation, and autumn and winter periods ashore, as well as during moult and gonad activity. A wide range of endocrine stimuli is involved, though experimental proof of this is required, and it is suggested that the winter haul-out is an adaptation to form hard dentine during the early years of immaturity.

Carrick, R., S. E. Csordas, Susan E. Ingham, and K. Keith. (Wildl. Surv. Sec., C.S.I.R.O., Canberra, Australia.) STUDIES ON THE SOUTHERN ELEPHANT SEAL, MIROUNGA LEONINA (L.). III. THE ANNUAL CYCLE IN RELATION TO AGE AND SEX. C.S.I.R.O. Wildl. Res. 7(2): 119-160, 8 figs. + 6 pls. Aug. 1962. WR 108: 45

Food does not appear to be limiting at any season, and population movements are confined to partial dispersal of immatures. Information is given on behavior and molt.

Carrick, R., S. E. Csordas, and Susan E. Ingham. (Wildl. Surv. Sec., C.S.I.R.O., Canberra, Australia.) STUDIES ON THE SOUTHERN ELEPHANT SEAL, MIROUNGA LEONINA (L.). IV. BREEDING AND DEVELOPMENT. C.S.I.R.O. Wildl. Res. 7(2): 161-197, 6 figs. + 8 pls. Aug. 1962. WR 108: 45

Maturity in the ♂ started at 6 years of age at Macquarie Island and at 4 years at South Georgia. About one-third of the ♀♀ at Macquarie Island were pregnant in their fourth year, and about one-fourth had their first pregnancy in their seventh year; all third-year ♀♀ on South Georgia were pregnant. The seals on Macquarie Island grew more slowly than on Georgia, and it was suggested that pressures within the population retarded growth.

Carrick, R., and Susan E. Ingham. (Wildl. Surv. Sec., C.S.I.R.O., Canberra, Australia.) STUDIES ON THE SOUTHERN ELEPHANT SEAL, MIROUNGA LEONINA (L.). V. POPULATION DYNAMICS AND UTILIZATION. C.S.I.R.O. Wildl. Res. 7(2): 198-206 + 3 pls. Aug. 1962. WR 108: 46

The breeding population of Mirounga leonina (L.) at Macquarie Island was stable at about 36,000 cows and 3,500-4,000 bulls, with a total population of 110,000. Survival of branded weaned pups to the fourth year of life was 40% in both sexes; 20% of ♀♀ survived to the eighth year of life, but few lived more than 12 years; 15% of ♂♂ survived to the eighth year, but the small number of breeding ♂♂ may have contained individuals 20 years old. The number of possible breeding places in the area of suitable food supply is a factor limiting world population of these seals.--From summ.

Haaften, J. L. van. (Inst. Biol. Field Res., Arnhem, Netherlands.) HARBOUR SEAL AND GREY SEAL IN DUTCH COASTAL WATERS. Trans. 4th Congr. Intern. Union Game Biol., Arnhem/Oosterbeek. 28 Sept.-5 Oct. 1959. p. 64-67. 1960. WR 108: 46

In English with German and Dutch summaries.

Hoffmeyer, H. SEEHUNDE UND SEEHUNDSJAGD AN DER DEUTSCHEN NORDSEEKÜSTE. [SEALS AND SEALING IN THE GERMAN NORTH SEA COASTS.] Z. Jagdwiss. 8(1): 1-13. Mar. 1962. WR 108: 46

In German with English and French summaries. A closed season on seal hunting has been in effect since 1938, with restriction on hunting methods. Censuses have been conducted since 1934 but confirmed data are available only since 1951. From 1958 through 1960 an average kill of about 665 seals was reported for the Federal Republic of Germany. Census methods are discussed and suggestions given for hunting and marking seals.

Ivashin, M. V. [ON THE PERIODICITY OF FEEDING IN THE HUMPBACKED WHALE IN THE SOUTHERN PART OF THE ATLANTIC OCEAN.] Bull. Moscow Obshch. Ispit. Prirody (Biol.) 66(6): 110-115. 1961. [From J. Mammal. 43(3), 1962.] WR 108: 46

In Russian with English summary.

Kenyon, Karl W. (Sand Point Naval Air Sta., Seattle 15, Wash.) NOTES ON PHOCID SEALS AT LITTLE DIOMEDE ISLAND, ALASKA. J. Wildl. Mgmt. 26(4): 380-387, 2 figs. Oct. 1962. WR 108: 46

The harbor seal (Phoca vitulina) and ribbon seal (Histriophoca fasciata) are scarce and seldom taken at Little Diomede. The ringed seal (Pusa hispida) and bearded seal (Erignathus barbatus) are moderately abundant and are hunted mostly in fall and spring seasons. About 90 ringed seals and 68 bearded seals were taken in the 1957-58 fall-to-spring hunting seasons and loss through sinking in spring was about 25% and 38%, respectively. Stomachs of 14 ringed seals revealed a preference for small shrimps. A few fish were also eaten. Stomachs of 17 bearded seals revealed an omnivorous diet with rock crabs and clams comprising the greatest food volume. The present bounty on ice-inhabiting seals is not justified.--Auth. abstr.

Ripley, Wm. Ellis, Keith W. Cox, and John L. Baxter. (Cox: Calif. Dept. Fish & Game, Sacramento.) CALIFORNIA SEA LION CENSUS FOR 1958, 1960 AND 1961. Calif. Fish & Game 48(4): 228-231, 1 fig. Oct. 1962. WR 108: 46

Summary: Ten sea lion censuses were made in Calif. between 1927 and 1961. The population has fluctuated, being highest in northern Calif. during 1958. In southern Calif., the peak of abundance was in 1961 when over 18,000 sea lions were on the southern Calif. offshore islands. Changes in their abundance may have been due to increased immigration into southern Calif., to a lessening of harassment by man or to environmental factors.

Thorsteinson, Fredrik V., and Calvin J. Lensink. (BCF Biol. Lab., Auke Bay, Alaska.) BIOLOGICAL OBSERVATIONS OF STELLER SEA LIONS TAKEN DURING AN EXPERIMENTAL HARVEST. J. Wildl. Mgmt. 26(4): 353-359, 1 fig. Oct. 1962. WR 108: 47

Summary: An experimental harvest of Steller sea lions was composed primarily of breeding bulls, because their pronounced territorial attachment and reluctance to leave rookeries made them easy prey for hunters. Killed harem bulls were quickly replaced by bachelor bulls. In a sample of 185 harem bulls, ages ranged from 6 to 17 years, with age classes 10 and 11 being dominant. Mean ages declined as the season progressed. Body lengths and baculum weights tended to increase with age, but the variability of these characters precluded their use as indicators of age. Growth of bulls is slight after 9 years of age. In stomach contents of 382 animals, including 10 females, only one commercially important fish (halibut) was identified.

MAMMALS--OTHER GROUPS

Deane, Norman N. THE SPOTTED HYAENA CROCUTA C. CROCUTA. Lammergeyer 2(2): 26-43, illus. June 1962. WR 108: 47

The present African distribution of the hyena is given. The physical characteristics and habits are considered along with general notes on social behavior and the relationship with other animals. Reproduction is discussed in some detail with emphasis on breeding, gestation, sexual organs, anal glands and copulation.--W. T. Van Velzen.

Harthoorn, A. M. THE CAPTURE AND RELOCATION OF THE WHITE (SQUARE-LIPPED) RHINOCEROS CERATOTHERIUM SIMUM SIMUM USING DRUG-IMMOBILIZING TECHNIQUES, AT THE UMFOLOZI GAME RESERVE, ZULULAND, NATAL. Lammergeyer 2(2): 1-9 + frontispiece. June 1962. WR 108: 47

The drugs Themalon and morphine hydrochloride and tranquilizers Largactil and Sernyl were used in the immobilization of rhinoceroses. The type of equipment used and the effect upon the animals are discussed. Details of capture, handling and transport are presented as well as factors in holding and release. For information presented in slightly different format see paper below.--W. T. Van Velzen.

Harthoorn, A. M. CAPTURE OF THE WHITE (SQUARE-LIPPED) RHINOCEROS CERATOTHERIUM SIMUM SIMUM (BURCHELL) WITH THE USE OF DRUG IMMOBILIZATION TECHNIQUE. Canadian J. Comp. Med. & Vet. Sci. 26(9): 203-208. Sept. 1962. WR 108: 47

Schaller, George B. THE ECOLOGY AND BEHAVIOR OF THE MOUNTAIN GORILLA. Ph.D. thesis, Univ. Wis. 761 p. 1962. [From long abstr. in Dissertation Abstr. 23(3), 1962.] WR 108: 47

A general study of the distribution and ecology of Gorilla g. beringei throughout its range in Africa with an intensive study of the behavior of one population. Behavioral data are based on 466 hours of direct observation of 10 gorilla groups, consisting of about 200 animals. Observations of associations within and between groups as well as individual display are included.--W. T. Van Velzen.

BIRDS--GENERAL

Belopol'skii, L. O. ECOLOGY OF SEA COLONY BIRDS OF THE BARENTS SEA. Acad. Sci., USSR (Moscow-Leningrad). iii + 346 p., 135 figs. 1956 [1961]. Published for the National Science Foundation and the Smithsonian Institution by the Israel Program for Scientific Translations. [Available from the Office of Technical Services, U. S. Dept. Commerce, Washington 25, D. C. Price $3.50.] WR 108: 47

Translated from the Russian. A four-part treatise on 18 species of sea birds of the Barents Sea. Part I gives a brief description of the Barents Sea

and the distribution of colony birds. Part II concerns the nutrition of sea birds and covers a wide scope of subjects including feeding methods, seasonal diet changes and food relationships. Part III, on the reproduction of colony birds, traces this activity from the arrival of the birds to their departure from the nesting grounds. Part IV deals with inter-specific and intra-specific relationships.--W. T. Van Velzen.

Berger, Daniel D., and Helmut C. Mueller. (Cedar Grove, Wis.) BAND RETENTION. Bird-Banding 31(2): 90-91. Apr. 1960. WR 108: 48

Seven bald eagles (Haliaeetus leucocephalus) and 4 great horned owls (Bubo virginianus) were double-banded, with one butt-end band and one lock-type band. Recoveries were received on 3 of the 11 birds, and all carried only the lock-type bands. A butt-end band was lost by an eagle within 33 days.

Caughley, Graeme. (Forest Serv., Wellington, New Zealand.) HABITAT OCCUPATION OF BIRDS IN A NEW ZEALAND HIGH COUNTRY DRAINAGE DURING THE BREEDING SEASON. Emu 62(2): 129-139, 5 figs. Aug. 1962. WR 108: 48

Galushin, V. M. STUDIES ON THE FEEDING OF NESTLINGS OF PREDATORY BIRDS WITH THE AID OF A NEST BOX. Zool. Zhur. (USSR) 39(3): 429-432. 1960. [From Tech. Transl. 8(3), 1962. Available from OTS. Price 50¢.] WR 108: 48

Translation from Russian. The nest-box method consists of separation of nestlings from their parents so as to enable the latter to see their offspring but not to give them captured food directly, nor to eat it themselves after it has lain in the nest.--From auth. summ.

Hussell, D. J. T., and James Woodford. (Royal Ontario Museum, 100 Queen's Park, Toronto, Ontario.) THE USE OF A HELIGOLAND TRAP AND MIST-NETS AT LONG POINT, ONTARIO. Bird-Banding 32(3): 115-125, 3 figs. July 1961. WR 108: 48

In a comparison of the Heligoland and the mist-net techniques it was found that approximately the same numbers of birds were captured by each method, but composition of the catch varied. The traps proved to be more efficient than nets in dealing with large influxes of migrants, but the nets were more versatile.

Il'enko, A. I., and G. Yu. Zagorodnyaya. [THE IMPORTANCE OF ARTIFICIAL NESTING PLACES FOR THE OVERNIGHT RESTING OF CERTAIN BIRDS WHICH NEST IN HOLLOW TREES IN WINTER.] Zool. Zhur. 40(11): 1736-1738. 1961. [From Biol. Abstr. 40(1), 1962, from Referat. Zhur., Biol., 1962, no. 8I214.] WR 108: 48

Translation [from Russian]. Original with English summary. Total of 627 inspections were made at night of artificial roosting places in 1957-1960. Passer montanus, Parus major, Parus caeruleus were found spending night in artificial nests. Table is given showing relationship of forest type to rate of utilization of artificial roosting places in winter.

Kennard, John H. (182 Tarrytown Rd., Manchester, N. H.) DYES FOR COLOR-MARKING. Bird-Banding 32(4): 228-229. Oct. 1961. WR 108: 48

"Drimark", a commercial product made in Japan, was found to last 8-10 weeks when used for color-marking the plumage of chickadees.

Koivisto, Ilkka. VÄRIMERKKIEN KÄYTTÖ RIISTAN MERKINNÄSSÄ. [GAME MARKING WITH COLORED WING TAGS.] Suomen Riista 14: 121-124, 4 figs. 1961. WR 108: 48

[In Finnish with English summary.] Experiments have been made in order to develop a marking method for birds to be individually recognized in the field from a reasonable distance. Illustrated tags were easily discernable with binoculars from a distance of 150-200 meters.--From auth. summ.

Marshall, A. J., editor. BIOLOGY AND COMPARATIVE PHYSIOLOGY OF BIRDS. VOL. I. Academic Press, N. Y. and London. xii + 518 p., illus. 1961. $14.00. WR 108: 49

The twelve chapters of this book cover the following subjects: origin, adaptive radiation, classification, geographical distribution of living birds, development, integumentary system, skeleton, musculature, blood-vascular system, respiratory system, digestion and digestive system, and excretion of birds. Each chapter is accompanied with an impressive bibliography, and each is written by a world authority in the respective field.

Marshall, A. J., editor. BIOLOGY AND COMPARATIVE PHYSIOLOGY OF BIRDS. VOL. II. Academic Press, N. Y. and London. x + 468 p., illus. 1961. [$15.00]. WR 108: 49

With extensive bibliographies and comprehensive coverage by world authorities, similar to that in the first volume, this second volume covers the following subjects: central nervous system, sensory organs (skin, taste, olfaction, equilibration, vision and hearing), endocrine glands, sex and secondary sexual characters, reproduction, energy metabolism, thermoregulation, body temperature, flight, breeding seasons, migration, long-distance orientation, behavior, and bird population.

McCamey, Franklin. (Univ. Conn., Storrs.) THE CHICKADEE TRAP. Bird-Banding 32(1): 51-55, 1 fig. Jan. 1961. WR 108: 49

A trigger design providing increased sensitivity is suggested for use on a one-cell trap.

McClure, H. Elliott. (Inst. Med. Res., Kuala Lumpur, Malaya.) TEN YEARS AND 10,000 BIRDS. [Part 1.] Bird-Banding 33(1): 1-21. Jan. 1962. WR 108: 49

More than 12,300 individual birds of 75 spp. were trapped during 1946-1950 in Kern County, California. This report was written ten years after termination of the banding program. Detailed information is given on banding of the birds and on available recoveries.

McClure, H. Elliott. (Inst. Med. Res., Kuala Lumpur, Malaya.) TEN YEARS AND 10,000 BIRDS (concluded). Bird-Banding 33(2): 69-84, 2 figs. Apr. 1962. WR 108: 49

See [Part 1] for abstract.

Norris, Robert A. (427 Bureka St., San Francisco, Calif.) A MODIFICATION OF THE MILLER METHOD OF AGING LIVE PASSERINE BIRDS. Bird-Banding 32(1): 55-57. Jan. 1961. WR 108: 49

By removing the feathers of the crown, wetting the skin with saliva, and examining the skin with a 10 X hand lens in direct sunlight, it was possible to see the white dots on the skull of adult birds, up to the size of the mockingbird. In immature birds, the skull appears uniform and somewhat pink.

Parks, G. Hapgood. (99 Warrenton Ave., Hartford, Conn.) A CONVENIENT METHOD OF SEXING AND AGING THE STARLING. Bird-Banding 33(3): 148-151. July 1962. WR 108: 49

The iris and ramus color techniques were used effectively in the sexing of 487 of 500 starlings examined. Of the 273 ♂♂, 236 were aged and of 214 ♀♀, 191 were aged by use of hackle feather measurements.

Simkiss, K. (Queen Mary Coll., Mile End Road, London, E. 1, England.) VIVIPARITY AND AVIAN REPRODUCTION. Ibis 104(2): 216-219. Apr. 1962. WR 108: 49

Viviparity has not developed in birds due to their unusual pattern of ovulation, which would lead to a graduated series of developing embryos. Birds would be confined to producing only one offspring if viviparous.

Skutch, Alexander F. (San Isidro del General, Costa Rica.) THE CONSTANCY OF INCUBATION. Wilson Bull. 74(2): 115-152. June 1962. WR 108: 50

The terms "sessions" and "recesses" are suggested to substitute for attentive and inattentive periods, respectively. Most birds keep their eggs covered 60-80% of their period of diurnal activity. When eggs fail to hatch, birds normally incubate 50% longer than the normal time required for incubation. They sometimes continue 2-3 times the normal incubation period. The length of the incubation period is correspondingly longer when birds incubate eggs less than 60% of diurnal period.--From summ.

Spencer, Albert W. (Wildl. Res. Center, Denver, Colo.) A DEVICE FOR HOLDING AND SPREADING BIRD BANDS. Bird-Banding 33(2): 96-97, 1 fig. Apr. 1962. WR 108: 50

Standard size 2 bands are threaded onto a bicycle spoke fitted with a brass cone on one end 3 inches long and tapering from 1/8- to 3/16-inch in diameter. These bands are opened the proper amount for attaching to the bird's leg by pulling them over the cone.

Spencer, Albert W., and John W. De Grasio. (Wildl. Res. Center, Denver 25, Colo.) CAPTURING BLACKBIRDS AND STARLINGS IN MARSH ROOSTS WITH DIP NETS. Bird-Banding 33(1): 42-43. Jan. 1962. WR 108: 50

Long-handled dip nets were used in a cattail marsh to capture 600 birds in 3 hours. Specifications of the nets: mouth -- 2.5 to 3 ft. in diameter; bag -- 4 to 6 ft. long; handle -- 10 to 20 ft. long.

Walkinshaw, Lawrence H., and Clara M. Walkinshaw. (819 North Ave., Battle Creek, Mich.) MIST-NETTING ON ANDROS ISLAND, BAHAMAS. Bird-Banding 32(1): 46-51. Jan. 1961. WR 108: 50

Wing, tail, tarsus and culmen measurements and body weights were given for individuals of 30 spp. of birds taken in mist nets in an 11-day visit to Andros Island.

Wasilewski, Aleksander. CERTAIN ASPECTS OF THE HABITAT SELECTION OF BIRDS. Ekol. Polska--Ser. A 9(7): 111-137, 15 figs. 1961. WR 108: 50

In English with Polish summary. A different degree of specialization in habitat selection was found in different species. With the majority of species the distribution of numbers along the habitat gradient is continuous. The habitat selection of the species is not absolutely constant, being more distinct during the nesting period. The majority of species make use of a whole group of habitats. In spatial distribution the maximum density with eurytopic species was observed on the borders of the habitat and with stenotopic species, within the habitat.--Author.

Watson, George E. (Yale Univ., New Haven, Conn.) A BIRD SKIN DRYING FORM FOR FIELD USE. Bird-Banding 33(2): 95-96, 2 figs. Apr. 1962. WR 108: 50

Skins are placed on their backs on a square of hardware cloth which is bent upward on both sides to hold wings in place.

Wetherbee, David Kenneth, and Nancy S. Wetherbee. (Univ. Mass., Amherst.) ARTIFICIAL INCUBATION OF EGGS OF VARIOUS BIRD SPECIES AND SOME ATTRIBUTES OF NEONATES. Bird-Banding 32(3): 141-159. July 1961. WR 108: 50

The artificial incubation of eggs of 83 spp. of wild birds is described. Data are given on egg weights and volumes, incubation period, variation within clutches of hatching time, and time before hatching when egg floats. Data are given on colors of natal down and of soft parts.--From summ.

Woodford, James, and D. J. T. Hussell. (Royal Ontario Museum, 100 Queen's Park, Toronto.) CONSTRUCTION AND USE OF HELIGOLAND TRAPS. Bird-Banding 32(3): 125-141, 2 figs. July 1961. WR 108: 50

The initial cost of an average sized Heligoland trap is approximately $200.00, and with proper care such a trap will last many years. Construction and operation of a Heligoland trap is properly a cooperative project.

BIRDS--MORPHOLOGY, PHYSIOLOGY, BEHAVIOR, MIGRATION

Adams, D. W. H. (Woodville, Nairn, Scotland.) RADAR OBSERVATIONS OF BIRD MIGRATION IN CYPRUS. Ibis 104(2): 133-146, 6 figs. Apr. 1962. WR 108: 51

Migration occurred almost daily, usually starting three-quarters of an hour after sunset. The standard direction of migration in Oct. was S to SSE, and SSW to SW. Most spring migrants traveled in a direction between NNE and NE, but a few flew NW.--From summ.

Andrew, R. J. (Yale Univ., New Haven, Conn.) THE DISPLAYS GIVEN BY PASSERINES IN COURTSHIP AND REPRODUCTIVE FIGHTING: A REVIEW. [PART I]. Ibis 103a (3): 315-348, 6 figs. July 1961. WR 108: 51

See [Part II] for abstract.

Andrew, R. J. (Yale Univ., New Haven, Conn.) THE DISPLAYS GIVEN BY PASSERINES IN COURTSHIP AND REPRODUCTIVE FIGHTING: A REVIEW. [PART II]. Ibis 103a (4): 549-579. Oct. 1961. WR 108: 51

Components of the display of passerine courtship fall into seven major groups: sexual, aggressive, fear, alert, nesting, parental, and begging responses. All may occur during reproductive fighting. However, in order to present the observational data reviewed, display components were classified on form alone. The following categories were used: bill raising, bill lowering, wing vibration, feather raising, components of the head-forward posture, lateral asymmetry, components of the female precopulatory display and song. Systematic implications of distribution of the different components are discussed. [303 references.]--From summ.

Annan, Ormsby. (Stephen F. Austin State Coll., Nacogdoches, Texas.) SEQUENCE OF MIGRATION, BY SEX, AGE, AND SPECIES, OF THRUSHES OF THE GENUS HYLOCICHLA, THROUGH CHICAGO. Bird-Banding 33(3): 130-137, 5 figs. July 1962. WR 108: 51

Some ♂♂ arrived at Chicago, Ill., earlier in the spring than any ♀♀, but in the fall there was no detected difference in migration time of sexes.

Ashmole, M. J. (Edward Grey Inst., Oxford, England.) THE MIGRATION OF EUROPEAN THRUSHES: A COMPARATIVE STUDY BASED ON RINGING RECOVERIES. [PART I]. Ibis 104(3): 314-346, 51 maps. July 1962. WR 108: 51

See [Part II] for abstract.

Ashmole, M. J. (Edward Grey Inst., Oxford, England.) THE MIGRATION OF EUROPEAN THRUSHES: A COMPARATIVE STUDY BASED ON RINGING RECOVERIES. [PART II]. Ibis 104(4): 522-559, 37 maps. Oct. 1962. WR 108: 51

This is an analysis of more than 3,200 recoveries of birds banded and recovered in different European countries. The following six species were considered: song thrush (Turdus philomelos), blackbird (T. merula), redwing (T. musicus), fieldfare (T. pilaris), ring ouzel (T. torquatus), and mistle thrush (T. viscivorus). The chief questions considered involved the resident or migratory status of individuals and the directions of migratory movements.

Ballance, D. K., and S. L. B. Lee. NOTES ON AUTUMN MIGRATION AT THE BOSPHORUS AND IN THE AEGEAN. Ibis 103a(2): 195-204, 1 map. Apr. 1961. WR 108: 51

Heavy migration occurred only when winds were light.

Craggs, Joan Hall. (Little Holt, Woodcote, Nr. Reading, England.) THE DEVELOPMENT OF SONG IN THE BLACKBIRD TURDUS MERULA. Ibis 104(3): 277-300, 17 figs. July 1962. WR 108: 51

From analysis of song recordings it was found that 26 phrases were used at the beginning of the season and constituted a basis for the development of more complex songs. The mature song presented a distinct contrast to the early song.

Davis, David E. (Pa. State Univ., University Park.) COMMENTS ON THE MIGRATION OF STARLINGS IN EASTERN UNITED STATES. Bird-Banding 31(4): 216-219. Oct. 1960. WR 108: 52

Banding records indicate that some starlings are resident and some are migratory, but data are inadequate to determine age or sex groups represented in the two categories.

Dobinson, Humphrey M. INLAND OBSERVATION POINTS / A NEW MEANS OF STUDYING MIGRATION. Bird Migration 2(3): 182-186, 4 figs. Sept. 1962. WR 108: 52

A system by which bird observations are recorded on a daily census sheet. Whenever a substantial increase or decrease occurs, this change is classified under one of eight headings. Similar changes are then looked for from other inland points. Preliminary tests indicate that all the major movements may be statistically significant.--W. T. Van Velzen.

Drury, W. H., and J. A. Keith. (Hatheway School Conserv., S. Lincoln, (Mass.) RADAR STUDIES OF SONGBIRD MIGRATION IN COASTAL NEW ENGLAND. Ibis 104 (4): 449-489, 2 figs. Oct. 1962. WR 108: 52

Late spring migrants were more regular in their schedules of arrival than earlier migrants, and they responded to clear skies, rising temperatures, and favorable winds. Particularly large movements followed week-long rains resulting from stalled weather. Passage of a sharp cold front stimulated reverse migration. Southward migration started in August, and numbers of migrants increased with the passage of each cold front. Radar showed southward, southeastward, and southwestward movements across eastern and coastal Mass. in fall. Birds in southward and southwestward movements were passerines, and those in southeastward movements were waders. It is suggested that specific changes in weather combine to make additive stimuli whereby a population reacts to fly in an air mass most suitable for migration.--From summ.

Elgmork, K. (Univ. Oslo, Blindern, Norway.) BEHAVIOUR OF PIED FLYCATCHERS DURING AN ECLIPSE OF THE SUN. British Birds 55(9): 385-387, 1 fig. Sept. 1962. WR 108: 52

In observations of a nesting pair of pied flycatchers, feeding frequency during an eclipse period and a normal period were the same.--W. T. Van Velzen.

Fankhauser, Don. (Patuxent Wildl. Res. Center, Laurel, Md.) OBSERVATIONS OF BIRDS FEEDING ON OVERWINTERING CORN BORER. Wilson Bull. 74(2): 191. June 1962. WR 108: 52

The downy woodpecker was the only bird found feeding on wintering corn borers.

Ficken, Millicent S. (Cornell Univ., Ithaca, N. Y.) MAINTENANCE ACTIVITIES OF THE AMERICAN REDSTART. Wilson Bull. 74(2): 153-165. June 1962. WR 108: 52

In this report feeding behavior of adults and ontogeny of stretching, scratching, and sleeping postures are discussed.

Ficken, Millicent S. (Cornell Univ., Ithaca, N. Y.) AGONISTIC BEHAVIOR AND TERRITORY IN THE AMERICAN REDSTART. Auk 79(4): 607-632. Oct. 1962. WR 108: 52

Two general categories of agonistic displays are described: defense of individual distance and defense of territory. Males defend the area against other males, while females defend against females and other small species. The visual and vocal displays of the males used in territorial defense are given. Two main song types were found with a frequency change during the reproductive season.--W. T. Van Velzen.

Filonov, K. P. [WINTER IN THE LIFE OF BIRDS IN THE BARGUZINSKII PRESERVE.] Trudy Barguzinsk. Gosudarst. Zapovednika 3: 37-98, illus. 1961. [From Biol. Abstr. 40(1), 1962, from Referat. Zhur., Biol., 1962, no. 8I216.] WR 108: 52

Translation [from Russian]. Original with English summary. For some species the number of birds present at a wintering site and their behavior is influenced by periods of snowfall and thickness of snow cover or by the presence of a suitable perch.

Fisher, Harvey I. (S. Ill. Univ., Carbondale.) THE HATCHING MUSCLE IN FRANKLIN'S GULL. Wilson Bull. 74(2): 166-172, 1 fig. June 1962. WR 108: 53
The hatching muscle of the Franklin's gull (Larus pipixcan) is described and compared with that of common tern (Sterna hirundo), black tern (Chlidonias niger), grebes, and domestic chickens.

Frazier, Anita, and Val Nolan, Jr. (Hiletsville, Ind.) COMMUNAL ROOSTING BY THE EASTERN BLUEBIRD IN WINTER. Bird-Banding 30(4): 219-226. Oct. 1959. WR 108: 53
Five to 14 eastern bluebirds roosted together in a bird house during cold, clear weather on 5 nights in Feb. The birds slept heads together and bodies pointed downward, forming an inverted cone. Retirement was earlier on colder nights; rising was later on colder mornings, more than an hour after sunrise.--From summ.

Hailman, Jack P. (Duke Univ., Durham, N. C.) DIRECT EVIDENCE FOR TRANS-CARIBBEAN MIGRATORY FLIGHTS OF SWALLOWS AND DRAGONFLIES. Am. Midland Nat. 68 (2): 430-433. Oct. 1962. WR 108: 53
Swallows, at least some of which were Hirundo rustica, were observed in the eastern Caribbean Sea flying southwestward on 5-6 Sept. One observation point was about 500 miles west of the Lesser Antilles, midway between Puerto Rico and Venezuela. The second observation point was 70 miles south from the eastern portion of Hispaniola.

Hamilton, William J. III. (Calif. Acad. Sci., San Francisco.) EVIDENCE CONCERNING THE FUNCTION OF NOCTURNAL CALL NOTES OF MIGRATORY BIRDS. Condor 64 (5): 390-401, 2 figs. Sept.-Oct. 1962. WR 108: 53
Work was conducted with caged bobolinks in an attempt to determine the function of nocturnal call notes. Micro-switches were used to record perching movements during migration restlessness and recordings were used to induce responsiveness. The behavior of night-active birds, the use of sonagraph analysis and the calls of passing night migrants are discussed.--W. T. Van Velzen.

Helms, Carl H., and William H. Drury, Jr. (Drumlin Farm, S. Lincoln, Mass.) WINTER AND MIGRATORY WEIGHT AND FAT FIELD STUDIES ON SOME NORTH AMERICAN BUNTINGS. Bird-Banding 31(1): 1-40, 6 figs. Jan. 1960. WR 108: 53
With tree sparrows and slate-colored juncos, diurnal weight variation ranged from 7.3% to 11.2% of body weight. Daytime weight increases were balanced by overnight loss, with half of daily variation attributable to fat and half to ingested food. Diurnal variation was greatest during mid-winter. Both tree sparrows and juncos gained weight until mid-winter from a fall low and lost weight after mid-winter. Weight changes are temperature dependent in winter but temperature independent during the spring migratory period.--From summ.

Hocking, B., and B. L. Mitchell. (Univ. Alberta, Alberta, Canada.) OWL VISION. Ibis 103a(2): 284-288. Apr. 1961. WR 108: 53
Summary: No evidence of important differences between the limit of red sensitivity in the tawny owl Strix aluco and in other birds or man could be found by measuring and observing pupil responses to change of intensity of illumination at this end of the spectrum. The gross structure of the eye and the rod/core ratio both show extreme specialization of owl vision for a weak light. No behavioral evidence that a tawny owl could see mice by their own infra-red radiation could be obtained.

Johnston, Richard F., and John William Hardy. (Univ. Kans., Lawrence.) BEHAVIOR OF THE PURPLE MARTIN. Wilson Bull. 74(3): 243-262, 4 figs. Sept. 1962. WR 108: 53
Martins arrive on breeding grounds two months before eggs are laid. Formation of the pair-bond is accomplished without ritualization of behavioral elements. Aggression is effected by few and simple postural and auditory mechanisms. Martins operate at all times of the year in groups. Social facilitation of reproductive activities seems not to be significant.--From auth. summ.

Kikkawa, Jiro. (Univ. New England, Armidale, N.S.W., Australia.) SOCIAL BEHAVIOUR OF THE WHITE-EYE ZOSTEROPS LATERALIS IN WINTER FLOCKS. Ibis 103a (3): 428-442, 10 figs. July 1961. WR 108: 54

Aggressive behavior takes different patterns according to the intensity of aggression. In crowded conditions the right of prior residence may be constantly challenged. A complex peck-right hierarchy was found among members of different flocks visiting a feeding station. Dominant birds were engaged in combat more often than subordinate birds, and subordinate birds avoided contact with dominants.

Lack, David. (Edward Grey Inst., Oxford, England.) MIGRATION ACROSS THE SOUTHERN NORTH SEA STUDIED BY RADAR. PART 3. MOVEMENTS IN JUNE AND JULY. Ibis 104(1): 74-85, 1 fig. Jan. 1962. WR 108: 54

The only prominent migration over the southern North Sea in June and July was a westward movement of lapwings (Vanellus vanellus). Migration occurred primarily with a wind between NE and SE.

Lack, David, and E. Eastwood. (Edward Grey Inst., Oxford, England.) RADAR FILMS OF MIGRATION OVER EASTERN ENGLAND. British Birds 55(9): 388-414, 21 figs., 2 pls. Sept. 1962. WR 108: 54

Radar filming techniques are described. A survey of migration is given throughout the year and main migratory movements are shown to be between E and W, NNW and SSE, NNE and SSW, and conversely. Hard-weather movements are discussed in detail and reversed and disoriented movements are described. Movement patterns are presented on map-diagrams.--From auth. summ.

Lofts, B. (Univ. London, E.C.1, England.) PHOTOPERIOD AND THE REFRACTORY PERIOD OF REPRODUCTION IN AN EQUATORIAL BIRD, QUELEA QUELEA. Ibis 104(3): 407-414, 2 figs., 1 pl. July 1962. WR 108: 54

It was concluded that the refractory period operates independently of photoperiodic fluctuations in the equatorial red-billed dioch.

Lofts, B., and A. J. Marshall. (Univ. London, London, England.) ZUGUNRUHE ACTIVITY IN CASTRATED BRAMBLINGS FRINGILLA MONTIFRINGILLA. Ibis 103a(2): 189-194, 2 figs., 1 pl. Apr. 1961. WR 108: 54

Zugunruhe, a condition of nocturnal activity in caged migratory birds that is considered to be identical to premigratory restlessness in wild birds, developed in the spring in captive castrated male bramblings. Restlessness occurred in control birds about a week earlier than in castrates, and restlessness started earlier in the evenings in the controls. Peaks of activity occurred at the same time in controls, castrates, and the wild population and coincided with the period when the wild population migrated to the breeding grounds. Restlessness occurred before active sperm production.--From summ.

Manwell, Reginald D. (Syracuse Univ., Syracuse, N. Y.) THE HOMING OF COWBIRDS. Auk 79(4): 649-654. Oct. 1962. WR 108: 54

Of 738 cowbirds released at Syracuse, 217 were recaught at the Fayetteville trapping site, a distance of 9 miles. A ratio of 2 ♂♂ to 1 ♀ was initially caught, but recaptured birds returned at a ratio of 3 ♂♂ to 1 ♀. Releases at distances up to 380 miles are presented in table form with indication of time between release and recapture, number released and recaught, and place liberated.--W. T. Van Velzen.

Marler, P., and M. Tamura. (Univ. Calif., Berkeley.) SONG "DIALECTS" IN THREE POPULATIONS OF WHITE-CROWNED SPARROWS. Condor 64(5): 368-377, 4 figs. Sept.-Oct. 1962. WR 108: 54

Summary: Analysis of song patterns in three populations of white-crowned sparrows, two close together and one distant, revealed an unusual degree of homogeneity in certain characteristics within each population. In one case the patterns remained similar over two consecutive breeding seasons. There were also distinctive and consistent differences between song patterns of the three populations, the divergence being greatest between those separated by the greatest distance. This constitutes one of the clearest examples of "dialects" in bird song. The possibility is discussed that such song variations may be signs of incipient speciation.

Mascher, Jan W., Bengt-Olov Stolt, and Lars Wallin. (Lästmakaregatan 4A, Uppsala, Sweden.) MIGRATION IN SPRING RECORDED BY RADAR AND FIELD OBSERVATIONS IN SWEDEN. Ibis 104(2): 205-215, 7 figs. Apr. 1962. WR 108: 55

Poor correlation was found between radar and field observations. Most radar echoes must have originated from birds flying at heights beyond the range of vision, while most of the visible migration was too low to be caught by radar. Most birds were flying ENE-NE.

Matthews, G. V. T. TESTS OF THE POSSIBLE SOCIAL SIGNIFICANCE OF 'NONSENSE' ORIENTATION. 13th Ann. Rept. Wildfowl Trust 1960-61. p. 47-52, 2 figs. 1962. WR 108: 55

Summary: To test whether 'nonsense' orientation was concerned with the reassembly of a scattered flock, large numbers of mallard were released in groups of varying sizes. Groups proceeded NW rather more strongly and directly than single birds and over a certain size the groups tend to break up. This argues against the orientation behavior being group-seeking. Single birds released to the north of, but close to, the roosting site still showed NW orientation, indicating that regaining the roost is not of paramount importance. The question of the importance of landmarks to the individual would repay further investigation.

Mohr, Hermann. UEBER DIE ENTWICKLUNG EINIGER VERHALTENWEISEN BEI HANDAUFGEZOGENEN SPERBERN (ACCIPITER N. NISUS L.) UND BAUMFALKEN (FALCO S. SUBBUTEO L.). [THE DEVELOPMENT OF SOME BEHAVIOR PATTERNS OF HAND-RAISED SPARROW HAWKS AND HOBBIES.] Z. Tierpsychol. 17(6): 700-727. 1960. [From Bird-Banding 32 (3), 1961.] WR 108: 55

[In German] with English summary. Notes are presented on imprinting, feeding habits and behavior of nestlings and adult birds.--From abstr. by M. M. Nice.

Mohr, Hermann. ZUM ERKENNEN VON RAUBVÖGELN, INBESONDERE VON SPERBER UND BAUMFALK, DURCH KLEINVÖGEL. [THE RECOGNITION OF BIRDS OF PREY, ESPECIALLY THE SPARROW HAWK AND HOBBY, BY SMALL BIRDS.] Z. Tierpsychol. 17(6): 686-699. 1960. [From Bird-Banding 32(3), 1961.] WR 108: 55

[In German] with English summary. Experiments with perched dummies showed that the swallows' [barn swallow (Hirundo rustica) and house martin (Delichon urbica)] recognition scheme for a bird of prey requires that the object be 3-dimensional, inconspicuously colored and with a hooked beak.--From abstr. by M. M. Nice.

Moreau, R. E. (Edward Grey Inst., Botanic Garden, Oxford, England.) PROBLEMS OF MEDITERRANEAN-SAHARAN MIGRATION. [PARTS 1 AND 2.] Ibis 103a(3): 373-427, 2 maps. July 1961. WR 108: 55

See abstract below.

Moreau, R. E. (Edward Grey Inst., Botanic Garden, Oxford, England.) PROBLEMS OF MEDITERRANEAN-SAHARAN MIGRATION. [PARTS 3 AND 4.] Ibis 103a(4): 580-623. Oct. 1961. WR 108: 55

Main directions of flight of birds crossing the Sahara Desert may be southwestward in autumn and northeastward in spring, involving a diagonal rather than a direct crossing of the desert. There are indications that birds do not concentrate on oases, and many birds probably fly non-stop for 1,200 miles. Ability to fly 50-60 hours without refueling is essential for most spring migrants. A seven-page bibliography is included.

Moynihan, M. (Canal Zone Biol. Area, Smithsonian Inst., Drawer C, Balboa, Canal Zone.) DISPLAY PATTERNS OF TROPICAL AMERICAN "NINE-PRIMARIED" SONGBIRDS. II. SOME SPECIES OF RAMPHOCELUS. Auk 79(4): 655-686, 6 figs. Oct. 1962. WR 108: 55

A study of display behavior based upon observation of wild and captive birds. Displays can be divided into purely hostile displays and partly or primarily sexual displays. Observations of Ramphocelus carbo and R. bresilius suggest a similarity of displays with R. dimidiatus. Most of the displays of R. dimidiatus are probably homologous to displays of Chlorospingus opthalmicus. --W. T. Van Velzen.

Mühl, Karl. DER STAR (STURNUS VULGARIS) ALS WINTERLICHER NUTZNIESSER VON SCHAFHERDEN. [THE UTILIZATION OF SHEEP FLOCKS BY THE STARLING (STURNUS VULGARIS) AS WINTER COVER.] Vogelwarte 19(1): 36-38. 1957. [From Bird-Banding 31(1), 1960.] WR 108: 56

In German. Flocks of starlings spent the greater part of snowy days feeding and taking cover beneath flocks of sheep.

Nisbet, I. C. T., P. R. Evans, and P. P. Feeny. (King's Coll., Cambridge, England.) MIGRATION FROM MOROCCO INTO SOUTHWEST SPAIN IN RELATION TO WEATHER. Ibis 103a(3): 349-372, 2 figs. July 1961. WR 108: 56

Observations were made on bird migration on the south coast of Spain during five successive springs. The direction of flight of nocturnal migrants seen crossing the moon was usually between north and north-northeast, but it was northwest on one cloudy night. Observed migration was correlated with dry weather and rising night temperature but not with high temperature.

Nolan, Val, Jr. (Ind. Univ., Bloomington.) THE SWAYING DISPLAY OF THE RED-EYED AND OTHER VIREOS. Condor 64(4): 273-276. July 1962. WR 108: 56

Swaying or bowing of the head and body is seldom-seen behavior of vireos. This may be primarily an appeasement display preventing attack without provoking escape and produced by the usual type of hostile motivation.

Perdeck, A. C. TWO TYPES OF ORIENTATION IN MIGRATING STARLINGS, STURNUS VULGARIS L., AND CHAFFINCHES, FRINGILLA COELEBS L., AS REVEALED BY DISPLACEMENT EXPERIMENTS. Ardea 46(1/2): 1-37. 1958. [From Bird-Banding 31(4), 1960.] WR 108: 56

In displacement experiments migrants are captured in numbers, banded and released well to the side of their probable normal line of flight. A total of 18,717 starlings were used which permitted carefully planned and executed releases of four types--displaced adults, displaced juveniles, adults and juveniles displaced in mixed groups and nondisplaced juvenile controls. The 354 recoveries of displaced birds showed clearly that individuals which had wintered at least once previously reoriented and arrived in their regular winter quarters, while those with no previous direct experience of the proper goal, ended up in wintering areas abnormal for their population. The first-year birds released in the company of adults did not perform significantly better than those released alone.--From auth. summ.

Rand, A. L. (Chicago Nat. Hist. Museum, Chicago, Ill.) WING LENGTH AS AN INDICATOR OF WEIGHT: A CONTRIBUTION. Bird-Banding 32(2): 71-79. Apr. 1961. WR 108: 56

Rowley, Ian. (Wildl. Surv. Sec., C.S.I.R.O., Canberra, Australia.) "RODENT-RUN" DISTRACTION DISPLAY BY A PASSERINE, THE SUPERB BLUE WREN MALURUS CYANEUS (L.). Behaviour 19(1-2): 170-176, 4 figs. May 1962. WR 108: 56

Summary: Distraction-display as performed by the Superb Blue Wren, Malurus cyaneus, takes the form of a true "rodent-run" and is stimulated by the alarm call of the young; this display is described and illustrated. Both male and female perform, although the colouring of only the latter resembles that of a small mammal. The display in other, related, species is discussed, and it is postulated that it may be a generic characteristic developed before sexual dimorphism and speciation were manifest.

Sagitov, A. K. [WINTERING PASSERINES OF THE ZERAVSHAN VALLEY.] Trudy Samarkandsk. Univ. 110: 3-24. 1961. [From Biol. Abstr. 40(1), 1962, from Referat. Zhur., Biol., 1962, no. 8I215.] WR 108: 56

Translation [from Russian]. Information is given on biology (chiefly diet) of 14 wintering species of birds, and it is concluded that wintering birds play an important role in balancing stocks of seeds and weeds and have a substantial influence on number of insects which are harmful to crops.

Schmidt-Koenig, Klaus. DIE SONNENORIENTERUNG RICHTUNGSDRESSIERTER TAUBEN IN IHRER PHYSIOLOGISCHEN NACHT. [THE SUN-ORIENTATION OF DIRECTIONALLY TRAINED PIGEONS IN THEIR PHYSIOLOGICAL NIGHT.] Naturwissenschaften 48(4): 110. 1961. [From Bird-Banding 32(4), 1961.] WR 108: 57

[In German.] An experiment with caged birds in which an artificial light-dark cycle was used to reset the internal clocks of the pigeons by 6 hours.--From abstr. by R. J. Newman.

Schüz, Ernst. DAS VERSCHLINGEN EIGENER JUNGER ("KRONISMUS") BEI VÖGELN UND SEINE BEDEUTUNG. [SWALLOWING OF OWN YOUNG ("KRONISM") BY BIRDS AND ITS SIGNIFICANCE.] Vogelwarte 19(1): 1-15. 1957. [From Bird-Banding 31(1), 1960.] WR 108: 57

In German. Incidences of altrical animals swallowing or trying to eat their own young in the wild are more frequent than formerly supposed. Kronism is a normal phenomenon in certain species (Ciconia ciconia, Falco tinnunculus and Lanius colluris). Schüz considers kronism to be an important mechanism of population control, hitherto overlooked, and he discusses the causes for such drastic types of behavior in the stork and in other species.

Thielke-Poltz, Helga, and Gerhard Thielke. AKUSTISCHES LERNEN VERSCHIEDEN ALTER SCHALLISOLIERTER AMSELM (TURDUS MERULA L.) UND DIE ENTWICKLUNG ERLERNTER MOTIVE OHNE UND MIT KÜNSTLICHEM EINFLUSS VON TESTOSTERON. [ACOUSTIC LEARNING OF SOUND-ISOLATED BLACKBIRDS AND THE DEVELOPMENT OF LEARNED MOTIVES WITHOUT AND WITH TESTOSTERONE.] Z. Tierpsychol. 17(2): 211-244. 1960. [From Bird-Banding 31(4), 1960.] WR 108: 57

[In German] with English summary. Blackbirds reared in acoustic isolation are able to reproduce many details of the full song but cannot arrange them in correct relationships. Normal full song is only possible when there has been opportunity for this to be learned from other birds.--From abstr. by M. M. Nice.

Thorpe, W. H., and D. R. Griffin. (Cambridge Univ., Cambridge, England.) ULTRASONIC FREQUENCIES IN BIRD SONG. Ibis 104(2): 220-227, 8 figs. Apr. 1962. WR 108: 57

There are high frequency components in the songs of many birds, but because of their low amplitudes it is unlikely that these high frequency components have communicative value, except possibly at very close range.

Tompa, Frank S. (Univ. British Columbia, Vancouver, Canada.) TERRITORIAL BEHAVIOR: THE MAIN CONTROLLING FACTOR OF A LOCAL SONG SPARROW POPULATION. Auk 79(4): 687-697, 2 figs. Oct. 1962. WR 108: 57

A study conducted in 1960 on Mandarte Island, British Columbia. The survey of territories, observations on behavioral aspects, population counts, and the emigration of yearly surplus into neighboring, less attractive habitats indicate that territorial behavior plays the most important role in regulating breeding numbers of song sparrows.--From auth. summ.

Vilks, E. K. EXPERIMENTAL INVESTIGATION OF THE BEHAVIOR OF CERTAIN PASSERINES DURING THE NESTING PERIOD BY MEANS OF NATURAL STIMULI. Akad. Nauk Latviyskoy SSR 6: 177-186. 1958. [From Bird-Banding 32(2), 1961.] WR 108: 57

Translated from Russian by David Nichols, 2373 Woolsey St., Berkeley 5, Calif., and available at 25¢ from the translator. Experiments conducted with pied flycatchers (Musicapa hypoleuca), spotted flycatchers (M. striata), great tits (Parus major) and crested tits (P. cristatus) in which 40 substitutions were made of nestlings for eggs and 24 substitutions of older nestlings for younger ones.--From abstr. by M. M. Nice.

Wahlstedt, Jens. UGGLORNAS SPELVANOR. [THE CALLS AND DISPLAYS OF OWLS.] Fauna & Flora 3-4: 81-112. 1959. [From Bird-Banding 31(2), 1960.] WR 108: 58

[In Swedish.] The seasonal and daily rhythms, the influence of the weather on behavior, reactions to imitations and the differences between male and female call notes are discussed for 6 species: the pygmy (Glaucidium passerinum), boreal (Aegolius funereus), long-eared (Asio otus), short-eared (Asio flammeus), tawny (Strix aluco), great gray (Strix nebulosa) and Ural (Strix uralensis) owls. The most intensive calling occurs from dusk to midnight and at dawn, varying in the different species. The boreal owl is a decided night caller, continuing practically all night, while the pygmy is exclusively a dawn musician. The calling of owls is synchronized with the activity of their prey animals which are easier to see on moonlit nights and more in evidence towards spring when the weather gets better. During the breeding season the females use much the same calls as the males. The females and young have their own specific notes. The author's phonetic rendering of the calls is realistic. Owls react quickly to imitations of their calls. Mating displays of boreal and tawny owls and flight displays of long- and short-eared owls are described.--From abstr. by Louise de K. Lawrence.

Wallraff, Hans G. KORRELATION ZWISCHEN HEIMFINDEVERMÖGEN VON BRIEFTAUBEN UND TEMPERATUR. [CORRELATION BETWEEN THE HOMING ABILITIES OF PIGEONS AND TEMPERATURE.] Naturwissenschaften 21: 568-569. 1957. [From Bird-Banding 30 (4), 1959.] WR 108: 58

[In German.] Based on studies made during 1956-7. "Relative homing performance" is graphed. The performance curve is based on the percentage of pigeons that returned on the day of release, the portion homing at 20 km/hour or better being given full value, and the portion homing more slowly being counted at half value. This procedure yields a marked correspondence with the temperature curve--a fit far more striking than the straight totals for first-day returns would produce. Improvement in homing performance levels off sharply at 10 C. The means by which low temperature influences the results remains unknown except that there is reason to believe it does so by impairing the homing ability itself, rather than by merely curbing the birds' desire to return.--R. J. Newman.

Wallraff, Hans G. ÜBER ZUSAMMENHÄNGE DES HEIMKEHRVERHALTENS VON BRIEFTAUBEN MIT METEOROLOGISCHEN UND GEOPHYSIKALISCHEN FAKTOREN. [CORRELATIONS BETWEEN THE HOMING BEHAVIOR OF PIGEONS AND METEOROLOGICAL AND GEOPHYSICAL FACTORS.] Z. Tierpsychol. 17(1): 82-113. 1960. [From Bird-Banding 31, 1960.] WR 108: 58

[In German.] The minor factors evaluated include: light and moderate wind, which exerts a small and purely mechanical influence on initial headings and homing performance; cloudiness, which acts only by covering the sun and hampering solar orientation; and visibility, which shows a loose connection with homing performance but is decisive only when very poor. The annual cycles of homing performance and air temperature prove to be roughly parallel but cannot be explained by direct physiological influence of temperature on the organism. No correlations with solar activity and geomagnetic disturbances are as yet evident. Homing performances tend to be poorer when barometric pressure in the upper and middle troposphere is falling interdiurnally than when it is rising, though the correlation with barometric pressure at ground level is not significant. This does not necessarily mean that pressure aloft affects homing directly but rather that both show evidence of being linked to a third and unknown variable.--From abstr. by R. J. Newman.

Wallraff, Hans G. KÖNNEN GRASMÜCKEN MIT HILFE DES STERNENHIMMELS NAVIGIEREN? [CAN SYLVIIDS NAVIGATE BY THE STARS?] Z. Tierpsychol. 17(2): 165-177. 1960. [From Bird-Banding 31(4), 1960.] WR 108: 58

[In German.] The author seems to subscribe to the "map and compass" concept of bird migration and to cast the stars in the latter role. Birds in planetarium experiments know by evaluation of unidentified stimuli that they have never left home, but simulated eastward and westward displacement distorts their stellar compass.--From abstr. by R. J. Newman.

Wetherbee, D. K., editor. SOME RECENT FINDINGS IN THE INHIBITION OF AVIAN REPRODUCTIVITY / SIX SEMINAR PAPERS. US F&WS, Spec. Sci. Rept.--Wildl. no. 67. ii + 97 p. Sept. 1962. WR 108: 59

"The six papers presented in this seminar are focused upon sterility either as reproductive failure deliberately induced, reproductive failure incidentally discovered, or sterility mechanisms postulated. For the most part, these papers are restricted to reviews of recently published findings, and, while not exhaustive in scope, they were prepared with a view toward presenting a preliminary elucidation of the breadth of subject area involved in reproductive failure in birds." The various phases of reproductivity were considered as follows: Sperm sustentation, Roy D. Crawford; Ova sustentation, Pedro P. Consuesra; Embryogenesis, Macreay J. Landy; Oogenesis, Ralph G. Somes, Jr., Spermatogenesis, Bernard C. Wentworth; and Embryo sustentation, Raymond P. Coppinger.

Williamson, Kenneth. THE NATURE OF 'LEADING LINE' BEHAVIOUR. Bird Migration 2(3): 176-182. Sept. 1962. WR 108: 59

Line-following behavior of diurnal migrants is discussed in the light of Dutch and Swedish observations. There are two different aspects--the immediate effects on the track of the individual bird, and the fundamental one of the evolutionary advantage gained by the whole population. It is suggested that line-following behavior evolved because it provides the only means whereby birds can assess, and counter, the effects of wind-drift on oriented flight.--From auth. summ.

Yapp, W. B. (Univ. Birmingham, Birmingham 15, England.) SOME PHYSICAL LIMITATIONS ON MIGRATION. Ibis 104(1): 86-89. Jan. 1962. WR 108: 59

Fuel reserves of small birds are probably adequate for flights of several hundred miles, but water loss is more likely to be the factor limiting duration of flights.--From summ.

Zedler, Wilhelm. STARENSCHWÄRME UND GREIFVÖGEL. [STARLINGS FLOCKS AND BIRDS OF PREY.] Ornithol. Mitteil. 11: 128-130. 1959. [From Bird-Banding 31 (2), 1960.] WR 108: 59

[In German.] Attacks by starlings on harriers (probably only Circus aeruginosus), the kestrel and lesser kestrel (Falco finnunculus and naumanni) and the common buzzard (Buteo buteo) were observed at the Neusiedler See. These are all hawks that take their prey on or near the ground. Attacks on hawks which take their prey in the air were not observed. Two attack maneuvers are reported. Flocks of 1000 or more fly with less organized precision and appear to "cover" the hawk for minutes at a time. Flocks of 100 or less move more as a unit and attack the bird. The hawks, when attacked, did not exhibit notable reaction. They simply flew out of the area and Zedler suggests that the presence of such a mass of birds effectively occupying much of the hawk's field of vision generates a psychological pressure that compels it to flee.--From abstr. by R. O. Bender.

BIRDS--MANUALS, FAUNAS, COMMUNITIES

Balat, F., and B. Rosicky. BIRDS OF THE LOWLAND FORESTS, THEIR MOVEMENTS AND IMPORTANCE IN A NATURAL FOCUS. Ceskoslov. Parasitol. 1: 23-44. 1954. Photocopies of 23 p. transl. [1962] may be ordered from the Natl. Agr. Library, USDA, Washington 25, D. C. [From Bibliog. Agr. 26(11), 1962.] WR 108: 59

Brandt, John H. (Songkhla, Thailand.) NESTS AND EGGS OF THE BIRDS OF THE TRUK ISLANDS. Condor 64(5): 416-437, 9 figs. Sept.-Oct. 1962. WR 108: 59

Summary: Few data on the nesting of birds of Truk Atoll, Caroline Islands, were previously available. From October, 1957, to March, 1960, records were obtained for 27 of the 29 regularly breeding birds of the islands. Details of nest construction, location of nests, nesting dates, egg size, description of eggs and the number of eggs in a clutch are reported. Descriptions and data on

eggs and nests of three subspecies are here reported apparently for the first time. Eggs of 10 subspecies, not collected before on Truk, but reported for other islands, are described. Sula sula rubripes and Sterna fuscata oahuensis both breed within the zone of the Truk Islands but were not previously included in the avifauna of Truk.

Easterla, David Arlen. AVIFAUNA OF TUCKER PRAIRIE. M.A. thesis, Univ. Mo. v + 144 p., 9 figs. June 1962. WR 108: 60

A study conducted on a virgin prairie tract in Missouri from Mar. 1960 to Oct. 1961 to determine the species of birds present at all seasons, the breeding population of obligate prairie species and other biological aspects. Mist netting, circular plot nest surveys, singing male counts and food habit analyses were made. A list of 132 species is classified into four residence groups. The effects of burning, mowing and grazing upon the bird population are discussed.--W. T. Van Velzen.

Hoffman, Robert S., and Ralph L. Hand. (Mont. State Univ., Missoula.) ADDITIONAL NOTES ON MONTANA BIRDS. Murrelet 43(2): 29-35. May-Aug. 1962. WR 108: 60

Data are given on the local status of 31 less common species.

Jansson, Karin. LINA MYRS FAGELLIV AREN 1947-1960. [THE AVIFAUNA OF LINA BOG 1947-1960.] Vår Fågelvärld 20: 193-211. 1961. [From Bird-Banding 33(2), 1962.] WR 108: 60

In Swedish with English summary. An annotated list of 133 spp. of birds found in a bog in the eastern part of the Baltic island of Gotland.

Land, Hugh C. (Concord Coll., Athens, W. Va.) A COLLECTION OF BIRDS FROM THE SIERRA DE LAS MINAS, GUATEMALA. Wilson Bull. 74(3): 267-283, 1 fig. Sept. 1962. WR 108: 60

An annotated list of 123 resident and 37 migratory species collected or recorded between 7 July 1958 and 3 April 1959. Material was collected at 5 different stations at elevations ranging from 3,000 to 9,400 feet.--W. T. Van Velzen.

Levy, Seymour H. (Route 9, Box 960, Tucson, Ariz.) ADDITIONAL SUMMER SOUTHERN IDAHO BIRD NOTES. Murrelet 43(1): 10-14. Jan.-Apr. 1962. WR 108: 60

Forty-nine species are listed as being new relative to a list published in 1950 [Murrelet 31(1): 2-8] covering the same area. The new total is 182 species.

Schüz, Ernst. (Museum für Naturkünde, Stuttgart, Germany.) DIE VOGELWELT DES SÜDKASPISCHEN TIEFLANDES. [THE BIRD WORLD OF THE SOUTH CASPIAN LOWLANDS.] Schweizerbart'sche Verlagsbuchhandlung, Stuttgart. 199 p. 1959. [From Bird-Banding 31(2), 1960.] WR 108: 60

A history of ornithological observation and an annotated list of 327 species of birds recorded between the Caspian Sea and Elburz Mountains. Ecology, migration, and dangers to birds from human activity are discussed.--From abstr. by M. M. Nice.

Tuck, Leslie M., and Louis Lemieux. THE AVIFAUNA OF BYLOT ISLAND. Dansk Ornithol. Forenings Tidsskrift. 53(3): 137-154. 1959. [From Bird-Banding 31 (2), 1960.] WR 108: 60

With Danish summary. A short description of the physiography and ecology of the island followed by an annotated list of some 50 spp. of birds.--From abstr. by O. L. Austin, Jr.

Ulfstrand, Staffan. FÅGELFAUNAN I KRANKESJÖN OCH DESS OMGIVNINGAR ÅR 1956-57. [THE AVIFAUNA 1956-57 OF KRANKESJÖN AND ITS ENVIRONMENT.] Fauna & Flora 1-2: 9-59. 1959. [From Bird-Banding 31(2), 1960.] WR 108: 61

[In Swedish.] Frequent censuses at the southernmost of Sweden's three famous bird lakes furnished records which clearly contradicted recent assumptions that Krankesjön had lost its importance from the ornithologist's standpoint. Of the 182 species listed, 95 were transients and 86 certain or probable breeders. Only one, the bittern (Botaurus stellaris), found at this lake in the past, was missing.--Louise de K. Lawrence.

BIRDS--POPULATIONS & FLUCTUATIONS

Boyd, Elizabeth M. (Mount Holyoke Coll., South Hadley, Mass.) A HALF-CENTURY'S CHANGES IN THE BIRD-LIFE AROUND SPRINGFIELD, MASSACHUSETTS. Bird-Banding 33(3): 137-148, 1 fig. July 1962. WR 108: 61

Comparison was made of the present bird population of western Massachusetts with that of 60 years ago. Except for the bobwhite and bluebird, which have shown decreases, birds generally have increased and new species have moved into the area. The status of the turkey vulture, barn owl, tufted titmouse, mockingbird, Carolina wren, evening grosbeak, and cardinal has changed from rare to common. Changed status of many other species is noted.

Grenquist, Pekka. RIISTANTUTKIMUSLAITOKSEN MERITARKKAILUALUEIDEN LINTUKANNAT VUOSINA 1949 JA 1959. [SEA BIRD POPULATIONS ON THE ARCHIPELAGO STUDY AREAS OF THE GAME RESEARCH INSTITUTE IN 1949 AND 1959.] Suomen Riista 14: 31-42, 4 figs. 1961. WR 108: 61

[In Finnish with English summary.] The breeding populations of sea birds have been censused yearly since 1948. Census figures are mainly based on nest counts in the more than 300 islands of this archipelago. The total number of ducks, particularly diving ducks, has almost doubled in ten years. The total number of Laridae and Alcidae has also doubled during this time.--From auth. summ.

Hansson, Lennart. STUDIER AV AND- OCH MÅSFÅGELBESTÅNDET I ÄNGELHOLM VINTERN 1958-59. [STUDIES OF DUCK AND GULL POPULATIONS AT ÄNGELHOLM DURING THE WINTER 1958-59.] Vår Fågelvärld 19: 136-145. 1960. [From Bird-Banding 32(1), 1961.] WR 108: 61

[In Swedish] with English summary. Weekly censuses were carried out from November through March. The influence of weather conditions, sex ratio in the ducks, and the correlation between immature and adult gulls are given attention.--From abstr. by Louise de K. Lawrence.

Jonsell, Bengt. FÅGEL LIVET I KÅLLSKÄREN-VATTUNGARNAS SKÅGARD VARIATIONER I HÄCKFÅGELBESTÅNDET FRÅN 1890-TALET TILL 1950-TALET. [BIRDLIFE OF THE KÄLLSKÄR-VATUNGAR ARCHIPELAGO. VARIATIONS IN THE BREEDING BIRD POPULATION FROM THE 1890 TO THE 1950 DECADE.] Vår Fågelvärld 18: 97-129. 1959. [From Bird-Banding 31(1), 1960.] WR 108: 61

In Swedish with English summary.

Kartashev, N. N. [BIRDS OF KOMANDORSKIE ISLANDS, AND SOME SUGGESTIONS FOR THEIR PROPER UTILIZATION.] Zool. Zhur. 40(9): 1395-1410. 1961. [From Biol. Abstr. 40(1), 1962, from Referat. Zhur., Biol., 1962, no. 6I181.] WR 108: 61

Translation [from Russian]. Original with English summary. A report is given of the relative abundance of birds on the island, and proposals are submitted for proper utilization of commercial bird reserves.

Larson, Joseph S., and Jackson M. Abbott. (Va. Coop. Wildl. Res. Unit, Blacksburg.) A MID-WINTER CENSUS OF AMERICAN BALD EAGLES IN THE CHESAPEAKE BAY REGION, 1962. Chesapeake Sci. 3(3): 211-213, 1 fig. Sept. 1962. WR 108: 62

Results of a 1962 mid-winter census of the American bald eagle present in the greater Chesapeake Bay region are reported. Ground observations supplemented by some aerial coverage located 200 eagles of which 24% were immature birds. Previous attempts to estimate eagle abundance through nest surveys in the region are reviewed.--From auth. abstr.

Meanley, Brooke, and John S. Webb. (Patuxent Wildl. Res. Center, Laurel, Md.) DISTRIBUTION OF WINTER REDWINGED BLACKBIRD POPULATIONS ON THE ATLANTIC COAST. Bird-Banding 32(2): 94-97, 1 fig. Apr. 1961. WR 108: 62

The 17 roosts reported contained from 100,000 to 15,000,000 birds per roost, with the largest roost being in the Dismal Swamp, Va. Winter roosts occur in association with agricultural land, blackbirds being fewer in forested areas. Larger roosts are relatively inaccessible because of their location--in wetlands or in densely vegetated areas.

Ratcliffe, D. A. (Nature Conserv., 12 Hope Terrace, Edinburgh 9, Scotland.) BREEDING DENSITY IN THE PEREGRINE FALCO PEREGRINUS AND RAVEN CORVUS CORAX. Ibis 104(1): 13-39, 1 fig. Jan. 1962. WR 108: 62

Breeding populations of the peregrine falcon and raven declined little during the period 1945-1961. Food supply is unlikely to be a limiting factor; suitable cliffs are necessary if breeding is to occur. Golden eagles, peregrine falcons and ravens are competitors for nesting space. Persecution does not limit breeding density over a long period of time, except in unsuitable terrain. No local increase in population followed high nesting success.--From summ.

Stamm, Donald D., David E. Davis, and Chandler S. Robbins. (U. S. Public Health Serv., Montgomery, Ala.) A METHOD OF STUDYING WILD BIRD POPULATIONS BY MIST-NETTING AND BANDING. Bird-Banding 31(3): 115-130. July 1960. WR 108: 62

Simultaneous estimates were made of a breeding population with the marking-recapture method and the spot-mapping method, with close agreement in results. Some birds had home ranges much larger than their singing territories.

Strawiński, Stefan. ZAGADNIENIE OCHRONY PTAŁÓW W TORUNIU. [BIRD PRESERVATION PROBLEMS IN TORUŃ.] Ochrona Przyrody 28: 39-60, 4 figs. 1962. WR 108: 62

In Polish with English summary. Of 117 species occurring within the town precincts, 79 were recorded during the breeding season. Municipal waste waters serve as a source of food for numerous aquatic birds but contamination by industrial sewage entails the depletion of fish on which other aquatic birds depend for food. The large number of Ploceidae exercises a noxious influence on the other species of birds. Publicity should be made of the thesis that the avifauna should be treated as an element of town-planning and a component of the urban culture.--From auth. summ.

Tickell, W. L. N., and C. D. Scotland. RECOVERIES OF RINGED GIANT PETRELS MACRONECTES GIGANTEUS. Ibis 103a(2): 260-266, 1 fig. Apr. 1961. WR 108: 62

This is a report of results of banding giant petrels on Signy Island in the South Orkneys and at Admiralty Bay in the South Shetlands during 1957-1959. A table of 112 recoveries is given.

Tinbergen, L. THE DYNAMICS OF INSECT AND BIRD POPULATIONS IN PINE WOODS. Arch. Néerlandaises de Zool. 13(3): 259-473. 1960. [From Bird-Banding 32(2), 1961.] WR 108: 62

This volume is a compilation of the following 5 papers: The natural control of insects in pine woods, L. Tinbergen; Conditions for damping of Nicholson oscillations in parasite-host systems, L. Tinbergen and H. Klomp; Protection against birds and parasites in some species of tenthedinid larvae, N. Prop;

Further evidence for the role of "Searching Images" in the hunting behavior of titmice, J. H. Mook, L. J. Mook, and H. S. Heikens; and Factors governing density in the chaffinch (Fringilla coelebs) in different types of wood, P. Glas.--From abstr. by M. M. Nice.

Webb, John S., and Kenneth Wetherbee. (Patuxent Wildl. Res. Center, Laurel, Md.) SOUTHEASTERN BREEDING RANGE OF THE BROWN-HEADED COWBIRD. Bird-Banding 31(2): 83-87, 1 fig. Apr. 1960. WR 108: 63

Data are given indicating a southeastward extension of the breeding range of the brown-headed cowbird since 1959.

BIRDS--ECONOMICS, CONTROL, MORTALITY

Bernard, Richard Fernand. FIELD AND LABORATORY STUDIES ON THE EFFECTS OF DDT ON BIRDS. Ph.D. thesis, Mich. State Univ. 1962. [From Dissertation Abstr. 23(4), 1962.] WR 108: 63

For this study 137 dead or dying birds (mostly robins) from known spray areas were analyzed for DDT. Several tissues from each were tested. Analysis of entire carcasses is not an accurate means of attributing mortality to DDT poisoning. A total of 52 birds of 27 species other than robins was also analyzed. Of these, 35 birds, representing 21 species, had at least some DDT in their tissues. It was concluded that bird mortality in areas sprayed with DDT for control of Dutch elm disease has been high and that the birds died from continued ingestion of this poison.--From abstr.

Bodenstein, Günther. ZUR ANNAHME VON GEFÄRBTEM GETREIDE DURCH WILDVÖGEL. [ON THE ACCEPTANCE OF COLORED GRAIN BY WILD BIRDS.] Ornithol. Mitteil. 11: 2-3. 1959. [From Bird-Banding 30(4), 1959.] WR 108: 63

In German. Variously colored grains were offered to pheasants, turtle doves, mallards, house and field sparrows, and wood doves. The objective was to determine whether a color could be found which would repel the birds. None was found. The use of chemical repellents was also unsuccessful.

Fitzwater, Wm. D., and George L. Hockenyos. (514 Richmond SE, Albuquerque, N. Mex.) DO FIREWORKS MOVE BIRDS? / SOME SCARE...SOME DON'T! Pest Control 30 (9): 14, 16, 36, illus. Sept. 1962. WR 108: 63

Various types of fireworks are described including rope firecrackers, pull igniters, and two-shot devices. Methods are suggested for use in various situations against starlings, cowbirds, blackbirds and grackles.--W. T. Van Velzen.

Hawkins, J. E., and P. C. Bull. CONTROLLING REDPOLLS IN OTAGO ORCHARDS. Orchardist New Zealand 35(4): 110-112. 1962. [From Biol. Abstr. 40(1), 1962.] WR 108: 63

Hodson, N. L. (Corby, Northants, England.) SOME NOTES ON THE CAUSES OF BIRD ROAD CASUALTIES. Bird Study 9(3): 168-173. Sept. 1962. WR 108: 63

A 2-year study was conducted near Corby, Northants, England, to see how various types of roadside cover influence bird casualties. A list of 644 bird casualties, half being house sparrows, is given and tabulated according to the cover type where found. Proposed and known ways in which casualties may occur are discussed.--W. T. Van Velzen.

Hudde, Hans. BEOBACHTUNGEN ÜBER DIE VERLUSTQUOTE BEI VOGELBRUTEN. [OBSERVATIONS ON THE LOSS OF BIRD BROODS.] Ornithol. Mitteil. 11: 149-152. 1959. [From Bird-Banding 31(2), 1960.] WR 108: 63

Observations made during 1949-58 of 1009 broods in the vicinity of Bassen are presented. The data represent 83 spp. and are tabulated by biotype and nest type. Average loss was about 30% but this figure is low because not all broods were followed to departure of the young.

Hurd, E. A. (Canada Dept. Agr. Expt. Farm, Regina.) PREVENTION OF CROP DAMAGE CAUSED BY BLACKBIRDS. Blue Jay 20(3): 110-111. Sept. 1962. WR 108: 64

To avoid damage to experimental plots by yellow-headed blackbirds, high voltage wires were used which produced continuous arcing that scared birds away or electrocuted those sitting on wires. Lure strips were also planted in the area to divert birds from the plots. A combination of methods is suggested for completely preventing damage.--W. T. Van Velzen.

Labutin, Yu. V. [DATA ON THE ECOLOGY OF THE GOSHAWK IN YAKUTIYA.] Nauch. Soobshch. Yakut. Filiala Sibir. Otdel. Akad. Nauk SSSR 5: 87-93. 1961. [From Biol. Abstr. 40(1), 1962, from Referat. Zhur., Biol., 1962, no. 8I243.] WR 108: 64

Translation [from Russian]. Chief food is European hare (73.5%) with birds (13.7%) and longtailed suslik (8.8%) also represented. Under the conditions studied, the goshawk is harmful and should be controlled by man.

Macdonald, J. W. (Ministry Agr., Fisheries & Food, Lasswade, Midlothian, England.) MORTALITY IN WILD BIRDS WITH SOME OBSERVATIONS ON WEIGHTS. Bird Study 9(3): 147-167. Sept. 1962. WR 108: 64

Summary: During 1960, 186 individual birds, representing 49 species, were examined. Poisoning 41%, parasitism 25%, adverse environmental factors 13%, injury 11% and bacterial and mycotic infections 9%, were the main causes of death and are discussed under these headings. The majority of the birds were weighed and were tabulated according to their sex, age and bodily condition.

MacDonald, Mrs. Roger N. (850 Main St., Lynnfield Center, Mass.) INJURY TO BIRDS BY ICE-COATED BANDS. Bird-Banding 32(1): 59. Jan. 1961. WR 108: 64

Repeats of a goldfinch and a tree sparrow showed evidence that metal bands may sometimes cause injury to the birds wearing them by the bands freezing to the feathers. Skin and flesh were torn on the goldfinch so that the internal organs appeared to be exposed. Feathers were pulled out, but skin was not torn on the tree sparrow. Temperatures ranged between 24°F. and 32°F.

Rysgaard, George N. (Northfield, Minn.) STORM DAMAGE TO A HERON ROOKERY. Flicker 34(3): 78-80, illus. Sept. 1962. WR 108: 64

On 13 May 1962, severe wind and hail stones measuring up to 8-3/4" in circumference caused considerable damage at a heron rookery. A survey showed 46 dead great blue herons, 10 dead common egrets, 71 crippled great blue herons, and 7 crippled common egrets. A high loss of newly-hatched young was also estimated.--W. T. Van Velzen.

Sawyer, Philip J. (Univ. N. H., Durham.) REPORT ON THE CAUSE OF MORTALITY AND THE MORPHOMETRY OF SEVENTY RUBY-CROWNED KINGLETS KILLED AT THE WENH-TV TOWER IN DEERFIELD, NEW HAMPSHIRE. Bird-Banding 32(3): 162-168. July 1961. WR 108: 64

Inclement weather was responsible for causing 130 birds to collide with the tower and guy wires. Among 70 ruby-crowned kinglets examined, males were significantly larger than females.--From summ.

Shaub, B. M. (159 Elm St., Northampton, Mass.) THE DESTRUCTION OF NEARLY ONE HUNDRED EVENING GROSBEAKS AT ST. LEON LE GRAND, QUEBEC. Bird-Banding 31 (3): 150-156, 3 figs. July 1960. WR 108: 64

In a misdirected effort to cooperate in the bird-banding program, a "French Canuck" woodsman shot and reported 94 banded evening grosbeaks. These birds had been banded in 11 states, with the most distant having been Mich. and Va.

Sigal, Simon. BIRD TRAGEDY AT THE DUNES. Ind. Audubon Quart. 38(2): 23-25. 1960. [From Bird-Banding 32(2), 1960.] WR 108: 64

A report of a survey in which 3636 drowned birds of 56 species were found along 10.5 miles of Lake Michigan shoreline after a severe storm on 16 April 1960.--From abstr. by R. J. Newman.

Snyder, Donald Benjamin. THE TOXICITY OF STRYCHNINE SULFATE TO RED-WINGED BLACKBIRDS AND EXPERIMENTAL BAITING FOR THIS SPECIES AND CERTAIN RELATED FORMS. M.S. thesis, Ohio State Univ. vii + 63 p., 24 figs. 1959. WR 108: 65

A study conducted from July 1958 to Nov. 1958 in Erie, Ottawa, and Sandusky Counties, Ohio. The median lethal dose, orally administered by means of a catheter, was found to be 3.98 mg/kg, with a variance of 0.068 and a standard deviation of 0.261. The LD_{95} dosage was 6.48 mg/kg. A great deal of variability existed in the susceptibility of different birds treated at the same dosage. No significant difference was detected in the susceptibility of three groups of redwings differing in sex and age. Grain treated at 50 mg/kg and weathered 13 days remained lethal to all treated redwings. Grain treated at 7.00 mg/kg and exposed to sunshine for one day was lethal to all treated birds, but grain exposed for longer periods of time was not lethal to more than 67% of the treated birds. Experimental baiting was unsuccessful during the corn-damage season, even though the bait was presented in a variety of ways at a number of different locations.--From auth. summ.

Tate, James, Jr. (N. Ill. Univ., De Kalb.) MEADOWLARK KILLED BY ELECTRIC FENCE. Wilson Bull. 74(2): 184. June 1962. WR 108: 65

The bird was electrocuted by a "weed burner" fence designed to burn off plants ordinarily growing up around a fence and shorting out the current.

Tilgner, Damazy Jerzy. (Politechnika, Gdanska, Poland.) SOME PSYCHO-PHYSIOLOGICAL CONSIDERATIONS WITH REGARD TO GAME REPELLENTS. (A THEORETICAL APPROACH). Trans. 4th Congr. Intern. Union Game Biol., Arnhem/Oosterbeek 28 Sept.-5 Oct. 1959. p. 128-130. 1960. WR 108: 65

In English with German and Dutch summaries. A short general discussion in which the author suggests use of the techniques of experimental physiology and behavior to assay the worth of repellents before field testing.--Howard M. Wight.

Vandenbergh, John G., and David E. Davis. (Pa. State Univ., University Park, Pa.) GAMETOCIDAL EFFECTS OF TRIETHYLENEMELAMINE ON A BREEDING POPULATION OF REDWINGED BLACKBIRDS. J. Wildl. Mgmt. 26(4): 366-371. Oct. 1962. WR 108: 65

During the 1960 and 1961 breeding seasons, triethylenemelamine, an inhibitor of meiosis, was fed to redwinged blackbirds in one of two marshes: in 1960, one marsh was treated and the other served as control, with the process reversed in 1961. The per cent hatchability and number of nestlings produced per nest were reduced in the treated marsh in both years. A greater reduction was evident in 1961, the year the higher dose was given. Testes weights were lower in both treated marshes. No differences in territorial or reproductive behavior of the birds were found in treated and non-treated marshes.--Authors.

BIRDS--PARASITES AND DISEASES

Anderson, R. C. FURTHER OBSERVATIONS ON DIPLOTRIAENA IN BIRDS. Canadian J. Zool. 39(3): 377. 1961. [From abstr. in Helminthol. Abstr. 31(1), 1962.] WR 108: 65

Information is presented on the host and geographical distribution of several species of Diplotriaena in birds from Ontario, supplementary to that contained in his revision of the genus published in 1959. Seven new host records are recorded.

Baer, J. G. HOST REACTIONS IN YOUNG BIRDS TO NATURALLY OCCURRING SUPER-INFESTATIONS WITH PORROCAECUM ENSICAUDATUM. J. Helminthol., R. T. Leiper Suppl. p. 1-4. 1961. [From abstr. in Helminthol. Abstr. 31(1), 1962.] WR 108: 65

An exceptionally heavy infection of Porrocaecum ensicaudatum in a young blackbird showed more than 100 adult worms and all stages of development within the intestinal mucosa of the gut.

Basova, N. N., T. M. Chernikova, and others. Q FEVER AND ORNITHOSIS IN WILD BIRDS. Vopr. Virusol. (USSR) 5(5): 586-591. 1960. [From Tech. Transl. 8(1), 1962. Available from OTS or SLA. Price $1.60.] WR 108: 66

[Translation from Russian.] The frequent detection of antibodies in the sera of mammals and birds and of rickettsia in the body of ticks and birds indicates the wide distribution of Q fever in nature. Detection of such does not demonstrate that the particular creature contributes to maintaining the agent in nature or to infection of humans.--From auth. summ.

Bikhovskaya-Pavlovskaya, I. E. [THE QUESTION OF SPECIFICITY OF TREMATODES.] Trudy Leningradskogo Obshch. Estestvoispitatelei (Zool.) 73(4): 171-177. 1957. [From Helminthol. Abstr. 31(1), 1962.] WR 108: 66

[Russian with French summary.] Studying the specificity of trematodes, the author has analysed the occurrence in their hosts of all the 485 species of bird trematodes known for the U.S.S.R. She concludes that most of the trematodes (330 species) prefer birds belonging to the same order and that this is the basic tendency, while a widening of the host circle to several orders occurs under the influence of ecological factors, e.g., feeding habits of the host. She discusses with examples the occurrence of trematodes in birds related either phylogenetically or ecologically.

Clark, Gordon M., and Louis N. Locke. (Rocky Mountain Lab., Hamilton, Mont.) CASE REPORT: OBSERVATIONS ON PSEUDOTUBERCULOSIS IN COMMON GRACKLES. Avian Disease 6(4): 506-510, 2 figs. Nov. 1962. WR 108: 66

Summary: Pasteurella pseudotuberculosis was implicated in 2 cases of epizootic damage in eastern grackles. This disease involves extensive tissue damage, with the production of characteristic pseudotubercles in the liver, spleen, lungs, and muscle. Pseudotuberculosis can be responsible for high mortality in icterid roosts during the late winter.

Fain, A., and K. E. Hyland. (Inst. Med. Tropicale Prince Leopold, Antwerp, Belgium.) THE MITES PARASITIC IN THE LUNGS OF BIRDS. THE VARIABILITY OF STERNOSTOMA TRACHEACOLUM LAWRENCE, 1948, IN DOMESTIC AND WILD BIRDS. Parasitology 52(3/4): 401-424, 54 figs. Nov. 1962. WR 108: 66

This is primarily a taxonomic paper, but it also contains a useful review of reports of mites in the respiratory tracts of birds.

Hobbs, B. C. PUBLIC HEALTH SIGNIFICANCE OF SALMONELLA CARRIERS IN LIVESTOCK AND BIRDS. J. Appl. Bacteriol. 24(3): 340-352. Dec. 1961. [From Bibliog. Agr. 26(10), 1962.] WR 108: 66

Kasimov, G. B. [THE PHYLOGENY OF HELMINTHS OF MEGAPODIDAE AND CRACIDAE AND THEIR RELATIONSHIP TO THEIR HOSTS.] Doklady Akad. Nauk Azerbaidzhan. SSR 15 (4): 347-349. 1959. [From Helminthol. Abstr. 31(2), 1962.] WR 108: 66

[In Russian.] Kasimov briefly discusses the specificity of the helminth fauna of Megapodidae and Cracidea to their hosts in relation to the characteristic habits and isolation of these two bird families from other Galliformes.

Kenaga, Eugene E. (1629 Isabella Rd., Midland, Mich.) SOME INSECT PARASITES ASSOCIATED WITH THE EASTERN BLUEBIRD IN MICHIGAN. Bird-Banding 32(2): 91-94. Apr. 1961. WR 108: 66

Case histories are given of 2 bluebird nests parasitized with Protocalliphora sialia, and data are given on incidence of parasitism of fly pupae by the wasp, Nasonia vitripennis.

Locke, L. N., J. E. Scanlon, R. J. Byrne, and J. O. Knisley, Jr. (Patuxent Wildl. Res. Center, Laurel, Md.) OCCURRENCE OF EASTERN ENCEPHALITIS VIRUS IN HOUSE SPARROWS. Wilson Bull. 74(3): 263-266. Sept. 1962. WR 108: 66

EEE virus was isolated from sparrow spleens during an investigation to determine the cause for a die-off of sparrows during the late summer and fall of 1959.--W. T. Van Velzen.

Mettrick, D. F. (Univ. Coll. Rhodesia & Nyasaland, Salisbury, Southern Rhodesia.) HELMINTH PARASITES OF HERTFORDSHIRE BIRDS--III. NEMATODES. J. Helminthol. 34(3/4): 259-266. 1960. [From abstr. in Helminthol. Abstr. 30(4), 1961.] WR 108: 67

Porrocaecum ensicaudatum from Turdus pilaris is a new host record, and the same nematode is recorded from Garrulus glandarius for the first time in Britain; Capillaria columbae from Columba livia domestica is also claimed as a new record for Britain. Eight other parasites are re-described and discussed.

Mettrick, D. F. (Univ. Coll. Rhodesia & Nyasaland, Salisbury, Southern Rhodesia.) HELMINTH PARASITES OF HERTFORDSHIRE BIRDS--IV. SURVEY OF RESULTS. J. Helminthol. 34(3/4): 267-276. 1961. [From Helminthol. Abstr. 30(4), 1961.] WR 108: 67

This paper includes observations on the incidence and distribution of trematode, cestode, nematode and acanthocephalan parasites in 22 species of British birds. Particular note is taken of seasonal and age incidence and possible explanations for these phenomena are offered.

Rosicky, B., and F. Balat. THE TICK (IXODES RICINUS L.) AS A BIRD PARASITE IN A NATURAL FOCUS. Ceskoslov. Parasitol. 1: 45-76. 1954. Photocopies of 36 p. transl. [1962] may be ordered from the Natl. Agr. Library, USDA, Washington 25, D. C. [From Bibliog. Agr. 26(11), 1962.] WR 108: 67

Vaccari, Italo, and Giovanni Ballarini. (Inst. Vet. Med. Clinic & Infectious Diseases, University, Parma, Italy.) BIOCENOSI E MALATTIA, ELEMENTO DI VALUTAZIONE NEI RAPPORTI DI BIOCENOSI: RIFERIMENTI AD INFESTIONE DA CESTODA IN ALCUNE SPECIE DI UCCELLI SELVATICI, MIGRATORI E NON. [BIOCENOSES AND DISEASES, ELEMENTS OF EVALUATION OF REPORTS OF BIOCENOSES: ACCOUNTS OF INFESTATIONS OF CESTODES IN SOME SPECIES OF WILD BIRDS.] Trans. 5th Congr. Intern. Union Game Biol., Bologna, 4-10 Sept. 1961. p. 199-207, 1 fig. May 1962. WR 108: 67

In Italian with German summary.

Welker, George William. HELMINTH PARASITES OF THE COMMON GRACKLE QUISCALUS QUISCULA VERSICOLOR VIEILLOT IN INDIANA. Ph.D. thesis, Ohio State Univ. 109 p. 1962. [From long abstr. in Dissertation Abstr. 23(2), 1962.] WR 108: 67

Eleven species of helminths were taken from 406 common grackles collected between 1958 and 1961. Of the birds examined, approximately 17% were infected with 2 species of cestodes, 91% with 5 species of trematodes, 12% with 1 species of acanthocephala and 100% with 3 species of nematodes.--W. T. Van Velzen.

Woodford, James, and Frank T. Lovesy. (Royal Ontario Museum, Toronto 5.) A MODIFIED FAIR ISLE APPARATUS FOR COLLECTING BIRD ECTO-PARASITES. Bird-Banding 31(3): 157-158. July 1960. WR 108: 67

The Fair Isle apparatus involves placing the bird in a plastic cylinder with the head protruding and introducing chloroform into the cylinder. The equipment was adapted to use carbon dioxide rather than chloroform. Treatment took a little more time but was more convenient.

GAME BIRDS--GENERAL

Brüll, Heinz. (Schleswig-Holsteinische Forschungsstation Wild, Wald und Flur, Weissenhaus, Post Lütjenburg Holstein, Germany.) DER DERZEITIGE STAND SUBTILER ÄSUNGSSTUDIEN DES FLUGWILDES. [EXACT INVESTIGATIONS OF THE FOOD OF WINGED GAME.] Trans. 4th Congr. Intern. Union Game Biol., Arnhem/Oosterbeek, 28 Sept.-5 Oct. 1959. p. 18-31, 9 figs. 1960. WR 108: 67

In German with summaries in English and Dutch. Feeding habits of pheasants, partridges and black grouse (based on accounts from the world literature and the author's investigations) are compared. Under present cultivation methods, the pheasant has the best possibility of survival. In times of want it can

change over to feeding on cereals and other crops (clover, potatoes, beets) while the proportion of animal food is high as compared to that of partridge and black grouse. Partridges feed mainly on the seeds of many species of weeds; the use of weed-killers therefore will reduce their diet and it will also bring the variety of food below the level which is indispensable to keep up viability. Cereals are only taken when dropped on the soil after ripening. Black grouse show a pronounced dependence on heath and marsh vegetation--especially in the spring. Its maintenance can only be assured by the presence of sufficiently large heath and marsh areas.--From auth. summ.

Koskimies, Jukka. (Game Res. Inst., Helsinki, Finland.) ONTOGENY OF THERMOREGULATION AND ENERGY METABOLISM IN SOME GALLINACEOUS BIRDS. Trans. 5th Congr. Intern. Union Game Biol., Bologna. 4-10 Sept. 1961. p. 149-160, 4 figs. May 1962. WR 108: 68

In English with German and Italian summaries.

Müller-Using, Detlev. (Inst. für Jagdkunde, Univ. Göttingen, Hann. Münden, Germany.) DIE BEDEUTUNG DER VOGELJAGD UND DIE ENTWICKLUNG DER VOGELSTRECKEN IN MITTELEUROPA. [THE IMPORTANCE OF THE BIRDS' SHOOTING AND THE DEVELOPMENT OF THE BAGS OF WINGED GAME IN CENTRAL EUROPE.] Trans. 5th Congr. Intern. Union Game Biol., Bologna. 4-10 Sept. 1961. p. 297-304. May 1962. WR 108: 68

In German with English and Italian summaries. Game birds make up about 6-8% of the total weight and 8-10% of the total value of killed game in central Europe. The history of the relative importance of game birds in the game kill in central Europe from prehistoric times to the present is reviewed.--From summary.

Sevast'yanov, G. N. [ON THE QUESTION OF THE NUTRITION OF GALLINACEAE.] Lesn. Zhur. 1962(2): 43-47. 1962. [From Bibliog. Agr. 26(10), 1962.] WR 108: 68

In Russian. In forests.

QUAIL

Gullion, Gordon W. (Univ. Minn., St. Paul.) ORGANIZATION AND MOVEMENTS OF COVEYS OF A GAMBEL QUAIL POPULATION. Condor 64(5): 402-415, 4 figs. Sept.-Oct. 1962. WR 108: 68

A two-year study was conducted in Las Vegas Valley, Nevada, to determine covey organization and movements in a desert valley situation. Systematic trapping and banding provided the basis for the study. In 452 trap-days, 275 captures and 1232 recaptures were made between December and April of 1951-2, and a follow-up period of 261 trap-days was made between November and March of 1952-3. Daily and seasonal movements patterns, homing and dispersal movements, covey composition and home ranges are discussed.--W. T. Van Velzen.

Johnson, A. Sydney. (Ala. Coop. Wildl. Res. Unit, Auburn.) ANTAGONISTIC RELATIONSHIPS BETWEEN ANTS AND WILDLIFE WITH SPECIAL REFERENCE TO IMPORTED FIRE ANTS AND BOBWHITE QUAIL IN THE SOUTHEAST. Proc. 15th Ann. Conf. SE Assoc. Game & Fish Comms. p. 88-107, 1 fig. 1961 [1962]. WR 108: 68

Nesting studies with penned quail were conducted during the summers of 1960 and 1961 in Ala. Approximately 30 hatches were obtained in close proximity to imported fire ant mounds. It was concluded that the invasion by the imported fire ant had little if any effect on total quail populations.--From auth. abstr.

Johnson, Albert Sydney III. ANTAGONISTIC RELATIONSHIPS BETWEEN ANTS AND WILDLIFE WITH SPECIAL REFERENCE TO IMPORTED FIRE ANTS AND BOBWHITE QUAIL IN THE SOUTHEASTERN UNITED STATES. M.S. thesis, Auburn Univ. xii + 100 p., 18 figs. 24 Aug. 1962. WR 108: 68

Laboratory and field observations studies were made on the effect of imported fire ants (Solenopsis saevissima richteri) on success in rearing young by bobwhites (Colinus virginianus) and cotton rats (Sigmodon hispidus). Imported fire ants do not attack healthy chicks or newborn cotton rats in the

nest. Ants feeding on young of these animals were confined to those found dead or dying. Some bobwhite nests were undisturbed when within 20 inches of active fire ant mounds. Incidental observations were made on five additional species of ants, and it was concluded that none of the ants studied were of importance as predators of young bobwhites and cotton rats when in the nest.

Packard, Gary. THE BOBWHITE IN KANSAS. Univ. Kans. Misc. Publ. no. 32. p. 1-12, illus. 16 Nov. 1962. WR 108: 69
This attractive booklet gives information of use to the farmer and rancher in attracting bobwhites. The need for cover is stressed, and the use of food plantings is urged rather than artificial winter feeding. If natural food is deficient or covered with ice and snow for more than five days, artificial feeding is recommended.

Pilla, Antonio Mario. SU ALCUNI CARATTERI DELLE UOVA DI QUAGLIA GIAPPONESE (COTURNIX COTURNIX JAPONICA TEMMINCK E SCHLEGEL.) [ON SOME CHARACTERISTICS OF THE EGGS OF THE JAPANESE QUAIL (COTURNIX COTURNIX JAPONICA).] Ricerche di Zool. Appl. alla Caccia. 33: 1-23, 4 figs. 1962. WR 108: 69
In Italian with summaries in English, French and German.

Stevens, Vernon Cecil. OBSERVATIONS ON THE REPRODUCTION AND DEVELOPMENT OF THE COTURNIX QUAIL. M.S. thesis, Ohio State Univ. ix + 77 p., 28 figs. 1958. WR 108: 69
A study of coturnix kept in an enclosed two-acre pen in which conditions were as close to natural as possible. Vegetation was treated mechanically to provide areas of various densities of nesting cover. Automatic recording instruments were used to collect data on weather and movements of nesting birds. Egg temperatures were measured by a 16-point potentiometer recorder. The nest attentiveness behavior was studied by recording their movements with photoelectric cell and micro-switch units. Embryonic development was studied by examination of 800 eggs. Observations were made on the breeding behavior with statistical analyses to determine if correlations existed between weather factors and the behavior of the birds. The results indicate that the coturnix is well able to reproduce under Ohio conditions.--From auth. summ.

Webb, Lloyd G. (Clemson Coll., Clemson, S. C.) MORE QUAIL ON PASTURE LANDS ARE POSSIBLE. S. C. Wildl. 9(4): 8-9, 11, 4 figs. Fall 1962. WR 108: 69
Quail population levels are thought to be affected by bicolor lespedeza food plots, as indicated by severe reductions of coveys following the destruction of well-managed bicolor plots. Bicolor lespedeza, when properly maintained and in association with suitable cover, will be utilized during the winter months; however, several years may be required before substantial use is noticeable. The existence of bicolor lespedeza food plots was found to considerably reduce the time required to locate coveys.--From auth. summ.

PHEASANTS

Bassini, Ettore. (Lab. Zool. Appl. alla Caccia, Bologna, Italy.) PYROPLASMOSE CHEZ LE FAISAN PUCRASIA (PUCRASIA MACROLOPHA NEPALENSIS G.). [PIROPLASMOSIS IN THE PHEASANT PUCRASIA (PUCRASIA MACROCOPHA NEPALENSIS G.).] Trans. 5th Congr. Intern. Union Game Biol., Bologna. 4-10 Sept. 1961. p. 94-96, 1 fig. May 1962. WR 108: 69
In French with German and Italian summaries.

Bever, Wendell. PHEASANT FEEDING--FACT AND FANCY. S. Dak. Conserv. Digest 29(3): 8-11, 28-30, illus. Fall 1962. WR 108: 69
An article to stress to the hunter that even with apparently high winter starvation losses, pheasant harvest the following season is not appreciably affected and the necessity of artificial feeding is both expensive and ineffective. A normal loss of 65-70% is experienced yearly with winter starvation being one of many factors.--W. T. Van Velzen.

Carnevale, Mijno Piero. (La Portalupa, Gambolò, Pavia, Italy.) ARTIFICIAL REARING OF THE GAME PHEASANT. Trans. 5th Congr. Intern. Union Game Biol., Bologna. 4-10 Sept. 1961. p. 59-80, 9 figs. May 1962. WR 108: 70

In English with French and Italian summaries. Techniques for the artificial rearing of pheasants in Italy on an "industrial" scale are outlined.

Kessler, Francis. (Ohio State Univ., Columbus.) MEASUREMENT OF NEST ATTENTIVENESS IN THE RING-NECKED PHEASANT. Auk 79(4): 702-705. Oct. 1962. WR 108: 70

A record of nest attentiveness was obtained with a photo-cell and light source connected to a relay-operated pen, recording on a continuous chart moving 18 cm/hour. Five semi-confined pheasants were used in both 1955 and 1956. The periods of inattentiveness varied from 26 to 46 in 1955 and from 33 to 112 in 1956. Most inattentive periods occurred between 0700-0930 and 1600-1800. The greatest amount of time spent off the nest occurred during the early and late stages of incubation.--W. T. Van Velzen.

Klonglan, Eugene DaWayne. ECOLOGY OF PHEASANT PRODUCTION IN SOUTHWESTERN IOWA. Ph.D. thesis, Iowa State Univ. Sci. & Technol. 357 p. 1962. [From long abstr. in Dissertation Abstr. 23(2), 1962.] WR 108: 70

A 3-year study conducted to identify possible factors limiting southern Iowa pheasant populations and discover any important differences in production between southern and northern Iowa pheasant ranges. Average population turnover was found to be 72% (83% for cocks, 64% for hens). It is thought that the southern problem involves a complex of factors, primarily the high rate of nest destruction and hen loss by farming activities, high mortality from predation, high temperatures affecting hatching, and low calcium levels in the soil.--W. T. Van Velzen.

Labisky, Ronald F., and Stuart H. Mann. (Ill. Nat. Hist. Surv., Urbana.) BACKTAG MARKERS FOR PHEASANTS. J. Wildl. Mgmt. 26(4): 393-399, 1 fig. Oct. 1962. WR 108: 70

Five different plastic materials, Masland Duran, U. S. Naugahyde, U. S. Fiberthin, Armor Tite, and Coverlight, were tested for durability with respect to their use in constructing backtag markers for pheasants; 2,689 backtags were attached to wild pheasants. Based on the 10,002 observations of tagged pheasants that were made, backtags constructed from U. S. Fiberthin and Armor Tite (both vinyl-coated nylon-mesh materials) showed no wear after being attached to pheasants for 18 and 12 months, respectively. Backtags constructed from these two materials have the potential of providing a durable marker for several years of use. Straps for attaching the backtags to pheasants should be made from good quality leather or Fiberthin. Backtags did not significantly affect the behavior or well-being of the pheasant. Backtags are strongly recommended for marking game birds for long-term field identification.--From abstr. by R. F. Labisky.

Lee, V. H., Srikrishnan Vadlamudi, and R. P. Hanson. (Univ. Wis., Madison.) BLOW FLY LARVAE AS A SOURCE OF BOTULINUM TOXIN FOR GAME FARM PHEASANTS. J. Wildl. Mgmt. 26(4): 411-413. Oct. 1962. WR 108: 70

Summary: Clostridium botulinum type C toxin was found in blow fly larvae, Lucilia illustris (Meigen), taken from carcasses of pheasants on a game farm in northern Wis. A suspension of 1.0 g of larvae was found to contain 2 x $10^{4.9}$ mouse LD_{50}. Eight third-instar larvae contained a lethal dose of toxin for pheasants 10-12 weeks old. One weanling-mouse LD_{50} was contained in 12 µg of larval extract. The role of blow flies and maggots in epizootics of botulism on pheasant farms is discussed.

Madson, John. (Olin Mathieson, East Alton, Ill.) THE RING-NECKED PHEASANT. Olin Mathieson Chem. Corp. 104 p., illus. 1962. WR 108: 71

Madson has again managed to present the results of research in a manner that should prove palatable to a wide group of readers that share one common denominator--interest--but are otherwise characterized by a considerable range in experience. The pheasant hunter, the landowner, the wildlife biologist, and the administrator should get considerable pleasure out of reading this well-written compendium on the ring-necked pheasant. The material is grouped under the following major headings: Life history, Ringneck management, Pheasant hunting, and "Pheasant frontier." There is a bibliography of 110 items. "Single copies will be sent free of charge [from Olin Mathieson] on individual post card requests as long as the supply lasts."

Pekic, Bozidar, and Lamberto Leporati. (Biol. Inst., Beograd, Jugoslavia.) PONTE ANTICIPÉE CHEZ LES FAISANS DE CHASSE (PHASIANUS C. COLCHICUS L. ET PH. COLCHICUS MONGOLICUS BRANDT). [ANTICIPATED LAYING IN GAME PHEASANTS.] Trans. 5th Congr. Intern. Union Game Biol., Bologna. 4-10 Sept. 1961. p. 278-285, 2 figs. May 1962. WR 108: 71

In French with English and Italian summaries. Artificial lighting combined with optimum temperatures, moisture, and supplementary feeding increases the laying period by months. Ultraviolet rays increase fertility by increasing the formation of spermatozoa. These rays, however, delay the laying of eggs. Female pheasants in experimental pens have laid more than 100 eggs, and sometimes as many as 120-140 eggs have been laid by some individuals.--From summary.

GROUSE, PARTRIDGE, ETC.

Brüll, Heinz. BIRKWILDFORSCHUNG UND BIRKWILDHEGE IN SCHLESWIG-HOLSTEIN / EIN BEITRAG ZUR BIOLOGIE DES BIRKWILDES. [INVESTIGATIONS OF BLACK GROUSE AND BLACK GROUSE PRESERVES IN SCHLESWIG-HOLSTEIN / A CONTRIBUTION TO THE BIOLOGY OF THE BLACK GROUSE.] Z. Jagdwiss. 7(3): 104-126, [11 figs.]. Oct. 1961. WR 108: 71

In German with English and French summaries. Two-thirds of the food of the black grouse consists of wild plants, with moor and heath plants 42% and green herbs 21% by volume. This suggests the need for maintaining sufficiently large areas in their original vegetation. The behavior of cocks in determining the order of rank is described. Statements of population dynamics and practical measures for the conservation of black grouse are given.

Brüll, Heinz. (Mühlenkamp 51, Oldenburg/Holstein, Germany.) ZUR BIOLOGISCHEN BEDEUTUNG DES BALZVERHALTENS DER BIRKHÄHNE (LYRURUS TETRIX). [ESSAY TO THE BIOLOGICAL SIGNIFICATION OF THE COUPLING BEHAVIOR OF BLACK GROUSE (LYRURUS TETRIX).] Trans. 5th Congr. Intern. Union Game Biol., Bologna. 4-10 Sept. 1961. p. 269-277, 5 figs. May 1962. WR 108: 71

In German with English and Italian summaries.

Campbell, Howard, and Roy E. Tomlinson. (N. Mex. Dept. Game & Fish, Albuquerque.) LENS WEIGHTS IN CHUKAR PARTRIDGES. J. Wildl. Mgmt. 26(4): 407-409. Oct. 1962. WR 108: 71

Oven-dried eye lenses of known-age, known-sex Turkish chukars (Alectoris graeca ssp.) were individually weighed to the nearest 0.1 mg to determine whether lens weight can be used to separate chukars into year classes in the fall. The 160 birds used included 60 young-of-the-year, 43 one-year-olds, and 57 two-year-olds. Statistically highly significant differences exist between mean lens weights of young and adults, but overlapping among individuals may make lens weight of doubtful value as an aging method. Successful application of a correction factor might, however, be feasible. No significant difference in mean lens weights between one-year-olds and two-year-olds was found, and this probably indicates that little if any lens growth occurs in chukars after the birds reach maturity. There was no significant difference between mean weights of left and right lenses, but there was a highly significant difference in mean lens weight between males and females.--H. Campbell.

Christensen, Glen C. (Nev. Fish & Game Comm., Reno.) USE OF THE CLAP NET FOR CAPTURING INDIAN SAND GROUSE. J. Wildl. Mgmt. 26(4): 400-402, 2 figs. Oct. 1962. WR 108: 72

Indian sand grouse were successfully captured in the Thar Desert of India for introduction into Nevada by use of a small Indian clap net modified for this purpose. The clap net might be successfully used on many game birds in the United States under conditions where conventional bait, drive, or waterhole traps do not produce satisfactory results or where the cannon net is not fast enough. The portability, adaptability, quick action, complete concealment, and ease of installing and resetting this trap help to make it a useful game management tool. Dimensions, materials, construction and techniques for using the trap on sand grouse are described.--Author.

Coles, C. L. (I.C.I. Game Res. Sta., Fordingbridge, Hampshire, England.) AN OUTLINE OF GREY PARTRIDGE PROPAGATION TRIALS AT THE I.C.I. GAME RESEARCH STATION. Trans. 4th Congr. Intern. Union Game Biol., Arnhem/Oosterbeek. 28 Sept.-5 Oct. 1959. p. 32-45, [7 figs.]. 1960. WR 108: 72

In English with German and Dutch summaries. Information on wintering, rearing methods, disease and survival rates of pen-reared partridges in England. "Although the foods, the equipment and the methods for partridge rearing have all been simplified, it is our impression at Fordingbridge that unless the partridge breeder has the same personal interest in his work as the producer of a fine wine or the grower of a beautiful orchid, he will never be consistently successful."

Eng, Robert L., and Gordon W. Gullion. (Mont. Fish & Game Dept., Helena.) THE PREDATION OF GOSHAWKS UPON RUFFED GROUSE ON THE CLOQUET FOREST RESEARCH CENTER, MINNESOTA. Wilson Bull. 74(3): 227-242, 4 figs. Sept. 1962. WR 108: 72

An investigation conducted from 1956 through 1961. Goshawk predation was heaviest during the spring period and accounted for 30% of known losses of banded grouse. Thirty-two kills were made within 1.25 miles and 26 within 1 mile of the nesting site. The predatory efforts were extended to an area of about 5 square miles.--From auth. summ.

Erickson, David Lee. MOVEMENTS AND SEASONAL HABITS OF RUFFED GROUSE ON THE UNIVERSITY OF IDAHO EXPERIMENTAL FOREST. M.S. thesis, Univ. Idaho. 1961. [Osborn and others. Forest Sci. 8(3), 1962.] WR 108: 72

Gullion, Gordon W., Robert L. Eng, and John J. Kupa. (Univ. Minn., Cloquet.) THREE METHODS FOR INDIVIDUALLY MARKING RUFFED GROUSE. J. Wildl. Mgmt. 26(4): 404-407. Oct. 1962. WR 108: 72

Back-tagging, color-banding and dyeing of plumage has been used to mark individual ruffed grouse (Bonasa umbellus) during a 6 year study in northern Minn. During the fall, winter and spring seasons back-tagging provides nearly four times as much opportunity as color-banding for identification of individual birds. Dyeing of plumage provides the best opportunity for bird identification during the summer. Back-tagging decreases longevity of marked birds to about one-half that achieved by color-banded grouse. Population dynamics among back-tagged grouse indicate a higher rate of replacement by young grouse than observed in either previously untrapped or color-banded populations.--G. W. Gullion.

Gullion, Gordon W., Ralph T. King, and Wm. H. Marshall. (Univ. Minn., Cloquet.) MALE RUFFED GROUSE AND THIRTY YEARS OF FOREST MANAGEMENT ON THE CLOQUET FOREST RESEARCH CENTER, MINNESOTA. J. Forestry 60(9): 617-622, 6 figs. Sept. 1962. WR 108: 72

Intensive forestry practices and research activities provide a basis for comparing histories of the forest and of drumming log use. The locations of 139 logs used between 1956 and 1961 indicate heavy preference for shrubby cover and low preference for closed canopy conifer stands. Records on 103 perennial activity centers show half in uncut forest. Clear cutting appeared to prolong use but did not affect use of new perennial centers.--From auth. summ.

Koivisto, Ilkka, and Matti Pirkola. METSON JA TEEREN SOITIMESTA SEKÄ SOIDINARVIOINNEISTA / KEVÄÄLLÄ 1960 KERÄTYN AINEISTON PERUSTEELLA. [BEHAVIOUR AND NUMBERS OF CAPERCAILLIE (TETRAO URUGALLUS) AND BLACK GROUSE (LYRURUS TETRIX) IN DISPLAY GROUNDS.] Suomen Riista 14: 53-64, 5 figs. 1961. WR 108: 73

[In Finnish with English summary.] Based partly on questionnaire data collected in the spring of 1960. Observations of 301 display grounds of black grouse and 185 of capercaillie were reported. Mean numbers observed per ground are shown and are found to be correlated with the respective population density. The daily variation in numbers throughout the spring is also discussed. Additional data on display activity are given.--From auth. summ.

Korschgen, Leroy J. (Conserv. Comm., Columbia, Mo.) FOOD HABITS OF GREATER PRAIRIE CHICKEN IN MISSOURI. Am. Midland Nat. 68(2): 307-318, 1 fig. Oct. 1962. WR 108: 73

Farm crops comprise 74.0% of diet, and food is not a factor limiting prairie chickens in Mo. Present populations are restricted to areas having permanent grassland. Several native prairie areas still exist because shallow, infertile soils with rock outcrops make them unsuitable for cultivation. Purchase of these scattered tracts is recommended as a management technique.

Krüger, Paul. LÄMPÖTILAN VAIKUTUKSESTA PESÄPAIKAN VALINTAAN JA PESIMISTULOKSEEN / ETELÄSUOMALAISELLA PELTOPYYLLÄ SUORITETTUJEN TARHAKOKEIDEN VALOSSA. [THE INFLUENCE OF TEMPERATURE ON THE SELECTION OF NEST SITE AND NESTING SUCCESS OF THE PARTRIDGE (PERDIX PERDIX).] Suomen Riista 14: 112-120, 5 figs. 1961. WR 108: 73

[In Finnish with English summary.]

Lind, E. A. TEEREN AAMULENNOSTA JA PÄIVÄAKTIIVISUUDEN ALKAMISESTA. [ON THE MORNING FLIGHT AND ONSET OF DAILY ACTIVITY OF BLACK GROUSE (LYRURUS TETRIX).] Suomen Riista 14: 75-81. 1961. WR 108: 73

[In Finnish with English summary.]

Nef, L. BESCHERMING DER DENNENKNOPPEN TEGEN DE AANVALLEN VAN HET KORHOEN LYRURUS TETRIX (L.). [PROTECTING PINE BUDS AGAINST THE ATTACKS OF BLACK GAME.] Le Gerfaut 49(1): 53-58. 1959. [From Bird-Banding 31(2), 1960.] WR 108: 73

[In Dutch.] From French summary. The black game causes considerable damage to young plantations of pine on the heath lands of Belgium by nipping off the young shoots. The various chemicals commonly used to protect farm crops against damage by crows proved ineffective, but dusting the young trees with lime gave them complete protection against the birds' depredation at far lower cost.--O. L. Austin, Jr.

Rikovski, A. S. [THE HELMINTHS OF TETRAO TETRIX AND THEIR ROLE IN REDUCING HOST NUMBERS.] Zool. Zhur. 39(11): 1607-1611. 1960. [From abstr. in Helminthol. Abstr. 31(1), 1962.] WR 108: 73

[Russian with English summary.] Post-mortem examination of 48 Tetrao tetrix from the Pereslavl state game bird farm showed 11 species of helminths to be present. The infection caused weight losses and mortality amongst young birds. As the young birds become infected at a very early age, the control measure advocated is the insecticidal eradication of the intermediate ant host of the subfamily Myrmicinae, which constitute the principal diet of the young birds.

Schlatterer, Edward Frederick. PRODUCTIVITY AND MOVEMENTS OF A POPULATION OF SAGE GROUSE IN SOUTHEASTERN IDAHO. M.S. thesis, Univ. Idaho. 1961. [Osborn and others. Forest Sci. 8(3), 1962.] WR 108: 73

See Dalke and others [WR 101: 50] for reference to comprehensive report on this problem.

Toschi, Augusto. (Wildl. Lab., University, Bologna, Italy.) PRELIMINARY RESULTS OF THE RELEASE OF PARTRIDGE (PERDIX PERDIX) IN ITALY. Trans. 5th Congr. Intern. Union Game Biol., Bologna. 4-10 Sept. 1961. p. 261-268. May 1962. WR 108: 74

In English with French and Italian summaries. Movements of released local partridges and released imported partridges in Italy were very similar. Most birds remained where they were released and only a small portion traveled beyond 10 km. The difference in movements of autumn, winter, and spring releases were slight.

TURKEY

Glazener, W. C. (Welder Wildl. Foundation, Sinton, Texas.) DEVELOPMENT OF TURKEY LAW IN TEXAS. Texas Game & Fish 20(17): 36-37, 43. Nov. 1962. WR 108: 74

Protective turkey legislation of Texas for the period 1881-1962.

Hayden, Arnold H. THE WILD TURKEY IN CAMERON COUNTY, PENNSYLVANIA. M.S. thesis, Pa. State Univ. 1961. [Osborn and others. Forest Sci. 8(3), 1962.] WR 108: 74

DOVES AND PIGEONS

Dillon, Olan W., Jr. (SCS, Ithaca, N. Y.) SOME MOURNING DOVE BANDING RESULTS. Bird-Banding 31(4): 220-221. Oct. 1960. WR 108: 74

Of 50 mourning doves banded as nestlings, 5 were recovered within the 2 years following banding, all within 50 miles of where they had been banded.

Donnelly, Jack A. TRICHOMONIASIS IN MOURNING DOVES. W. Va. Conserv. 26 (8): 13-14. Oct. 1962. WR 108: 74

This is an account of the cause and symptoms of the disease and its incidence as shown by a survey involving collections in 18 states of 2,109 specimens, 220 were found to be positive by use of throat swab-culture tests.

Laub, Kenneth Wilder. THE RELATION OF PARENTAL CARE AND THE CONDITION OF THE GLANDULAR CROP TO THE SUCCESSFUL RBARING OF YOUNG MOURNING DOVES, ZENAIDURA MACROURA (L.). M.S. thesis, Ohio State Univ. vi + 68 p., 5 figs. 1956. WR 108: 74

A study made in central Ohio during 1955-6. Sixty-five nests were disrupted at various stages in the nesting period and observed. In no case was a strange adult known to assist in incubating or caring for young in a disrupted nest. No nest was successful after an adult was removed during incubation. The inability of one adult to produce sufficient crop milk for two nestlings is considered the most important factor in determining the success of a disrupted nest. Fifty-one crops from nesting adults were examined. Free crop milk was first found after nine days of incubation; the latest was nine days after brooding. Crop wall development is correlated with nesting stage. A method of color-marking doves is described. Abnormal clutch sizes are discussed.--From auth. abstr.

Mackey, James Penrose. SOME ASPECTS OF MOURNING DOVE BEHAVIOR RELATED TO REPRODUCTION. M.S. thesis, Ohio State Univ. vii + 101 p., 13 figs. 1954. WR 108: 74

An intensive study of mourning dove nesting behavior during 1952 and 1953 at Columbus, Ohio. Nesting doves were trapped at the nest and marked. Four marked doves remained mated throughout the nesting season of 1953. Two pairs remained mated in each of two successive nesting seasons. The nesting season extended from about the first of March to October. The nesting success amounted to 64.7% in 1952 and 68.1% in 1953. There was an average annual production of 4.4 juveniles per nesting pair. Repeated observations were made

of cooing behavior. Data were obtained on the rate of molt of juvenile primaries. The results of this work tended to substantiate the use of this method for aging juvenile doves.--From auth. abstr.

Murton, R. K., and M. G. Ridpath. THE AUTUMN MOVEMENTS OF THE WOODPIGEON. Bird Study 9(1): 7-14, 3 figs. Mar. 1962. WR 108: 75

An investigation of woodpigeon movements using B.T.O. banding recoveries and observations at roosts during a four-year period. Banding recoveries showed most British birds to be sedentary, 75% staying within 25 miles of where banded. A southerly trend was apparent in winter recoveries of over 5 miles. Continental banding showed marked south-western movements across Europe.--From auth. summ.

Murton, R. K., and A. J. Isaacson. (Min. Agr., Tangley Place, Surrey, England.) THE FUNCTIONAL BASIS OF SOME BEHAVIOUR IN THE WOODPIGEON COLUMBA PALUMBUS. Ibis 104(4): 503-521, 2 figs. Oct. 1962. WR 108: 75

Certain aspects of flocking and breeding behavior are discussed. It was suggested that the time available for intra-pair stimulation, as influenced by the food supply, may operate a timing mechanism leading to the young being produced when maximum food is available.

Schmid, Frederick C. (Patuxent Wildl. Res. Center, Laurel, Md.) PREDATION ON A DISEASED MOURNING DOVE. Bird-Banding 31(4): 220. Oct. 1960. WR 108: 75

A sparrow hawk was observed capturing a mourning dove affected with trichomoniasis.

Smith, Parker B. MEASURING DOVE HARVEST BY HUNTING FIELD TYPES. Proc. 15th Ann. Conf. SE Assoc. Game & Fish Comms. p. 74-77, 1 fig. 1961 [1962]. WR 108: 75

Dove harvest data for the 1960 hunting season are discussed and tabulated. Data from 12 south-eastern states are included.--W. T. Van Velzen.

Webb, Lloyd G. (Clemson Coll., Clemson, S. C.) OVERSHOOTING WILL HURT DOVE HUNTING. S. C. Wildl. 9(4): 4-5, illus. Fall 1962. WR 108: 75

A study during the 1958-59 and 1959-60 hunting seasons to compare controlled and uncontrolled shooting. With the elimination of opening day figures the kill per hour on controlled shooting areas was approximately 3.5 times higher than on uncontrolled areas. In addition, crippling loss was more than 7 times higher on the uncontrolled areas, which were shot daily, than on the controlled areas, which were shot once a week. The minimum time lapse between shoots was not determined but was thought to vary locally.--W. T. Van Velzen.

Wight, Howard M. (Patuxent Wildl. Res. Center, Laurel, Md.) MOURNING DOVE STATUS REPORT, 1962. US F&WS Spec. Sci. Rept.--Wildl. no. 70. iv + 33 p., 3 figs. Nov. 1962. WR 108: 75

Abstract: An index to the 1962 mourning dove breeding population was obtained by a call-count survey conducted throughout the United States. Trends in the breeding population index were calculated for three management units and for hunting and nonhunting States within the management units. Trends in the breeding population indexes from 1961 to 1962 were as follows: Eastern Unit down 3 percent, Central Unit down 11.5 percent, and Western Unit down 12 percent. For the United States as a whole, the 1962 breeding population index is down 10 percent from 1961.

WATERFOWL

Addy, C. E. (Patuxent Wildl. Res. Center, Laurel, Md.) WATERFOWL MANAGEMENT--WHAT OF THE FUTURE? Proc. 15th Ann. Conf. SE Assoc. Game & Fish Comms. p. 71-74. 1961 [1962]. WR 108: 75

The following points are considered of primary importance for a future management program: control the management of important waterfowl areas, provide for enhancement of waterfowl values in all programs, develop and apply

techniques which produce more ducks and which will permit more intensive species management, reduce crippling loss, and eliminate the possibility of lead poisoning.--W. T. Van Velzen.

Benson, Dirck, and Donald D. Foley. (N. Y. State Conserv. Dept., Delmar.) HATCHING DATES OF WATERFOWL IN NEW YORK. N. Y. Fish & Game J. 9(2): 73-92, 3 figs. July 1962. WR 108: 76

Abstract: Hatching dates were calculated for nearly 1,900 waterfowl broods observed while less than 3 weeks old. For the principal species, the hatching peaks were found to be: black duck, mid-May through early June; mallard, late May through mid-June; wood duck, mid-May through late June; and blue-winged teal, early June. Within these ranges, hatching dates in a given year tended to be earliest in the lower Hudson Valley, followed by Long Island, the Erie-Ontario Lowland, the middle Hudson Valley, the Southern Tier, and the central Adirondacks in that order. There was considerable overlap, however. Little difference was noted from year to year for the same species in the same area.

Bergman, Göran. ALLIN JA MUSTALINNUN MUUTTOKANNAT KEVÄÄLLÄ 1960. [THE MIGRATING POPULATIONS OF THE LONG-TAILED DUCK (CLANGULA HYEMALIS) AND COMMON SCOTER (MELANITTA NIGRA) IN THE SPRING 1960.] Suomen Riista 14: 69-74, 1 fig. 1961. WR 108: 76

[In Finnish with English summary.] By means of radar, the total number of flocks of long-tailed duck and common scoter was observed to be about 10,000. On the basis of an average flock size of 150 birds, the calculated number of long-tailed ducks was about 300,000 and the number of common scoters 1,200,000. In the spring of 1961, radar investigations were continued and some increase in the long-tailed duck population was revealed.--From auth. summ.

Bolen, Eric G. NESTING OF BLACK-BELLIED TREE DUCKS IN TEXAS (DENDROCYGNA AUTUMNALIS). Audubon Field Notes 16(5): 482-485, illus. Oct. 1962. WR 108: 76

[Contribution No. 72, Welder Wildlife Foundation, Sinton, Texas.] Nesting sites are generally either in tree cavities or on the ground. Black-bellies at times nest gregariously and "dump-nests" are commonly found. Clutch size ranges from 12 to 16 eggs and incubation lasts about 28 days.

Boyd, Hugh, and Jeffery Harrison. FIRST-AUTUMN DISPERSAL OF HAND-REARED MALLARD. 13th Ann. Rept. Wildfowl Trust 1960-61. p. 70-74. 1962. WR 108: 76

Summary: Recoveries of young mallard in their first season are used to compare the dispersal of hand-reared and of wild ducks in Britain. The only important difference is in the proportion of birds moving away from the point of release: hand-reared birds are less likely to travel far than wild ones. This favors the building-up of local populations by the use of hand-reared birds.

Boyd, Hugh, and Peter Scott, editors. THE THIRTEENTH ANNUAL REPORT OF THE WILDFOWL TRUST 1960-61. Printed for Wildfowl Trust (Slimbridge, Gloucestershire, England) by F. Bailey & Son, Ltd., Dursley, Gloucestershire, England. 204 p., illus. + 32 pls. 1962. Price 17 shillings and sixpence. WR 108: 76

In addition to articles entered in this issue of WR, under the author's name, there are various reports on the Trust's work and conservation reports from many European countries. Additional articles included are: Brent goose population studies, 1960-61, P. J. K. Burton; Wildlife research on the White Sea coast, V. N. Karpovitch and N. N. Skokova; A gravel pit wildfowl reserve, James Harrison, Jeffery Harrison, and Peter Olney; The wildfowl of the Matsalu National Park, E. Kumari; Salmonella sp. and Clostridium botulinum in waterfowl and sea-birds, F. Steiniger; In search of ducks in South America, S. Sellick; The food-supplies of Essex brent in the winter of 1960-61, P. J. K. Burton; The wanderings of a sailor, W. Tennant; and short notes.--W. T. Van Velzen.

Davies, S. J. J. F. (Emmanuel Coll., Cambridge, England.) THE NEST-BUILDING BEHAVIOUR OF THE MAGPIE GOOSE ANSERANAS SEMIPALMATA. Ibis 104(2): 147-157, 4 figs. Apr. 1962. WR 108: 77

Building activity begins some two months before the eggs are laid, and a large number of preliminary nests are built before the true nest. It is thought that ♂♂ generally initiate and take a large share in nest-building. Building activity appears to be intensified in wet weather. Habitat selection stems from an innate tendency to build nests from vertical elements in the environment and to select sites with restricted characteristics of height and density of cover plants.

Davis, John P., Carl H. Thomas, and Leslie L. Glasgow. (La. State Univ., Baton Rouge.) FOODS AVAILABLE TO WATERFOWL IN FALLOW RICEFIELDS OF SOUTHWEST LOUISIANA, 1960-1961. Proc. 15th Ann. Conf. SE Assoc. Game & Fish Comms. p. 60-66. 1961 [1962]. WR 108: 77

A total of 450 ground samples from 9 fallow ricefields were analyzed to determine the species of seeds available to waterfowl in 6 one-year-old fallow ricefields and 3 two-year-old fallow ricefields, the amounts of each food present in pounds/acre, and the seasonal availability of these foods.--From auth. abstr.

Denson, Eley P., Jr., and Wallace W. Bentley. (US F&WS, Sacramento, Calif.) THE MIGRATION AND STATUS OF WATERFOWL AT HUMBOLDT BAY, CALIFORNIA. Murrelet 43(2): 19-28. May-Aug. 1962. WR 108: 77

Aerial and ground observations were made of the waterfowl populations in the Humboldt Bay and Lower Eel River valley regions. Observations were compared from three periods: 15 Oct. 1956 to 10 Jan. 1957; 21 Sept. 1959 to 10 Dec. 1959; and 18 Oct. 1960 to 17 Jan. 1961.

Dzubin, Alex. (Univ. Saskatchewan, Saskatoon.) SASKATCHEWAN BANDED MALLARD RECOVERED IN EASTERN SIBERIA. Bird-Banding 33(3): 152-153. July 1962. WR 108: 77

An adult ♂ banded in Saskatchewan on 26 Sept. 1958 was recovered in eastern Siberia on 2 July 1959.

Bygenraam, J. A. (Inst. Biol. Field Res., Arnhem, Netherlands.) ON 'THE LEAD' IN DUCK DECOYS. Trans. 4th Congr. Intern. Union Game Biol., Arnhem/Oosterbeek. 28 Sept.-5 Oct. 1959. p. 68-77, 3 figs. 1960. WR 108: 77

In English with German and Dutch summaries. The number of mallards composing the resident population ("the lead") of a decoy amounts to 1,300 to 1,600 per decoy. The number increases till Nov. in spite of catches, and stays unchanged until early spring. Afterwards the majority leaves for the breeding grounds. Some breed in the duck decoy. It is demonstrated by (a) a comparison of the age ratio in the field and in the decoy-captures, and (b) a comparison of the recoveries of banded mallards inside and outside the duck decoys, that duck decoys are more attractive to juvenile ducks than older ones.

Florschutz, Otto, Jr. THE BLACK DUCK IN NORTH CAROLINA. Wildl. in N. C. 26(12): 14-15. Dec. 1962. WR 108: 77

In the 1960-61 hunting season, 13.7% of the ducks bagged in N. C. were black ducks. The most important harvest area was Currituck Sound. Of 260 banded black ducks recovered in N. C., 28% were banded in N. Y., but 24 states and provinces were represented. A black duck banded in Vt. was recovered 4 days later in N. C., and one banded in N. C. in 1937 was recovered 22 years later in Quebec.

Grenquist, P. (Finnish Game Res. Inst., Helsinki, Finland.) FINNISH GAME RESEARCH ON WATERFOWL, 1948-1957. Trans. 4th Congr. Intern. Union Game Biol., Arnhem/Oosterbeek. 28 Sept.-5 Oct. 1959. p. 78-85. 1960. WR 108: 77

In English with German and Dutch summaries. Accounts are given on the fluctuations in numbers during the 1950's of the following species of waterfowl in Finland: mallard, scaup, tufted duck, goldeneye, long-tailed duck, velvet scoter, eider, goosander, red-breasted merganser and the grey lag goose.

Hamilton, William J., III. (Calif. Acad. Sci., San Francisco.) INITIAL ORIENTATION AND HOMING OF PINTAILS. Bird-Banding 33(2): 61-69, 3 figs. Apr. 1962. WR 108: 78

At flying age, 120 captive-reared pintails were released at distances up to 75 miles from their home cage, and 15 were recaptured at the home cage.

Hester, F. Eugene, and Thomas L. Quay. A THREE-YEAR STUDY OF THE FALL MIGRATION AND ROOSTING-FLIGHT HABITS OF THE WOOD DUCK IN EAST-CENTRAL NORTH CAROLINA. Proc. 15th Ann. Conf. SE Assoc. Game & Fish Comms. p. 55-60, 4 figs. 1961 [1962]. WR 108: 78

Forty afternoon counts were made during three fall migrations. The largest populations of wood ducks were present during late Oct. and early Nov. Flight time and flock size are discussed and presented in chart form.--W. T. Van Velzen.

Jahn, Laurence R. (Wildl. Mgmt. Inst., Horicon, Wis.) THE FUTURE OF WATERFOWL. Proc. 15th Ann. Conf. SE Assoc. Game & Fish Comms. p. 68-70. 1961 [1962]. WR 108: 78

An outline of the past and present actions taken in waterfowl management followed by a discussion of the future needs.--W. T. Van Velzen.

Johnsgard, Paul A. (Univ. Nebr., Lincoln.) EVOLUTIONARY TRENDS IN THE BEHAVIOR AND MORPHOLOGY OF THE ANATIDAE. 13th Ann. Rept. Wildfowl Trust 1960-61. p. 130-148, 5 figs. 1962. [From Studies Dept. Zool., Univ. Nebr., no. 340.] WR 108: 78

The major evolutionary trends most clearly evident in the Anatidae are from monomorphism to dimorphism in plumage, voice and displays, in association with a trend from long pair bonds to temporary pair bonds; from generalized nesting and feeding adaptations to highly specialized ones with associated specializations in diving adaptations and bill structure; from a single yearly body molt to two molts of the body plumage yearly; and towards the development of elaborate male plumage patterns and wing specula associated with displays that exhibit these patterns.--From auth. summ.

Lampio, Teppo. SUOMEN PESIVÄ JA MUUTTAVA METSÄHANHIKANTA. [THE BREEDING POPULATION AND MIGRATION OF BEAN GOOSE (ANSER FABALIS) IN FINLAND.] Suomen Riista 14: 82-94, 11 figs. 1961. WR 108: 78

[In Finnish with English summary.] The breeding populations of bean goose in the early 1950's were approximately 1,000 pairs. The breeding range, relative abundance and phenology of spring migration are given. Within the breeding range the number of geese observed in autumn is 1.6 times higher than that observed in spring. It is deduced from this that the average increment is 60% and that 37.5% of the geese are juvenile birds. Data presented were mainly collected through questionnaires.--From auth. summ.

Lemieux, Louis. (Dept. Game & Fisheries, Quebec, Canada.) SUMMER WITH GEESE ON BAFFIN ISLAND. Mass. Audubon 47(1): 1-6, illus. Autumn 1962. WR 108: 78

In order to more accurately census greater snow geese, an attempt was made to band a large number of lesser snow geese which have been thought to mingle with the larger subspecies in migration. A brief outline of the trapping method, by which 11,800 birds were captured during the summer of 1961 is given. Present returns seem to indicate that greater snow geese flocks are little diluted by flocks of other subspecies.--W. T. Van Velzen.

Linkola, Pentti. SORSALINTUKANTOJEN KEHITYKSESTÄ KESKI-HÄMEEN VESILLÄ 1950-60. [DUCK POPULATIONS IN CENTRAL HÄME FROM 1950 TO 1960.] Suomen Riista 14: 125-137, 3 figs. 1961. WR 108: 78

[In Finnish with English summary.]

Marquardt, Richard Earl. ECOLOGY OF THE MIGRATING AND WINTERING FLOCKS OF THE SMALL WHITE-CHEEKED GEESE WITHIN THE SOUTH CENTRAL UNITED STATES. Ph.D. thesis, Okla. State Univ. 179 p., 18 figs. Aug. 1962. WR 108: 79

Small Canada geese prefer exposed feeding, resting, and roosting places. Feeding was most often observed in fields of more than 100 acres. Small Canada geese migrate southward over two relatively distinct routes, designated tall- and short-grass prairie routes. Route names imply no ecological relations of the birds.

Marris, R., and M. A. Ogilvie. THE RINGING OF BARNACLE GEESE IN GREENLAND IN 1961. 13th Ann. Rept. Wildfowl Trust 1960-61. p. 53-64. 1962. WR 108: 79

The equipment and methods used for banding barnacle geese in Jameson Land (East Greenland) are briefly described. Between 16 July and 4 August, 569 geese were caught and banded. All adult geese and a sample of goslings were weighed and sexed. Catching operations and observations are recorded in field-note style.--W. T. Van Velzen.

Miller, William R. (Vt. Fish & Game Dept., Milton.) AUTOMATIC ACTIVATING MECHANISM FOR WATERFOWL NEST TRAP. J. Wildl. Mgmt. 26(4): 402-404, 1 fig. Oct. 1962. WR 108: 79

Body heat of incubating duck closes a thermoswitch taped to clutch egg. This triggers electrically a rubber band powered mechanism to purse nest trap, permitting capture. Device eliminates manual trap failures with wary hens.--Auth. abstr.

Mills, Derek. (Salmon Res. Lab., Contin, Ross-shire, Scotland.) THE GOOSANDER AND RED-BREASTED MERGANSER IN SCOTLAND. 13th Ann. Rept. Wildfowl Trust 1960-61. p. 79-92, 4 figs. 1962. WR 108: 79

A summary of recent information and observations on the numbers and seasonal distribution of Mergus merganser and M. serrator in Scotland. Breeding and winter distribution for both species are plotted on full-page maps. Notes on feeding methods and enemies are included.--W. T. Van Velzen.

Naylor, A. E. (Calif. Dept. Fish & Game, 722 Capitol Ave., Sacramento.) WOOD DUCKS AND NEST BOXES. Calif. Dept. Fish & Game, Game Mgmt. Leafl. no. 6. 8 p., 7 figs. 1962. WR 108: 79

Illustrations and descriptions are given for the construction, placement and maintenance of wood duck nest boxes.

Nelson, Harvey K. (Branch of Wildl. Refuges, Minneapolis, Minn.) RECENT APPROACHES TO CANADA GOOSE MANAGEMENT. US F&WS, Spec. Sci. Rept.--Wildl. no. 66. iv + 25 p., 5 figs. Sept. 1962. WR 108: 79

The classification and ranges of the Canada geese in the management programs of the Mississippi and Central Flyways are briefly presented. Trends in the four major populations are shown by means of tables. Management procedures are outlined and a harvest quota system discussed, with modifications suggested for the eastern prairie population. Future needs in goose management are outlined. --W. T. Van Velzen.

Ogilvie, M. A. THE MOVEMENTS OF SHOVELER RINGED IN BRITAIN. 13th Ann. Rept. Wildfowl Trust 1960-61. p. 65-69, 2 figs. 1962. WR 108: 79

Summary: Shoveler breeding and bred in Great Britain tend to move south in autumn and winter, some travelling as far as south-west Spain, the Camargue and central Italy. Few seem to be wholly sedentary. No clear case of abmigration has been found. Ringing in autumn and winter in southern England and Wales reveals differences in the movements of shoveler caught from August to October and those caught from November to February. While recoveries in winter of birds from both groups show a mainly southerly scatter like that of the breeding birds, the winter-ringed birds have provided a relatively large proportion of recoveries around the Baltic and east into the U.S.S.R. This suggests that winter visitors and passage-migrants from the north-east tend to arrive in England quite late. Shoveler are probably most numerous in England in March, but hardly any have been ringed at that time so that the movements of these late-winter and spring visitors are not yet understood.

Olney, P. J. S. THE FOOD HABITS OF A HAND-REARED MALLARD POPULATION. 13th Ann. Rept. Wildfowl Trust 1960-61. p. 117-125, 1 fig. 1962. WR 108: 80

An analysis of 77 hand-reared birds collected between 1958 and 1962, after having been released into the wild, showed Quercus, Sparganium and Carpinus to form the principal food items even though grain was fed during the period of observation. Obvious differences in feeding habits were noted throughout the season.--W. T. Van Velzen.

Pool, W. FEEDING HABITS OF THE HARLEQUIN DUCK. 13th Ann. Rept. Wildfowl Trust 1960-61. p. 126-129. 1962. WR 108: 80

Observations at the Laxá River (Iceland) from 7 to 15 July 1961, showed harlequin ducks to have long inactive periods interspersed with short periods of intense feeding activity. Feeding was most commonly observed just before sunset and was accomplished by diving or head-dipping.--W. T. Van Velzen.

Roux, Francis. (15 Rue Vezelay, Paris 8, France.) COUP D'OEIL SUR LES MIGRATIONS DES OIES SAUVAGES EN FRANCE. [GLIMPSE ON WILD GEESE MIGRATIONS IN FRANCE.] Trans. 5th Congr. Intern. Union Game Biol., Bologna. 4-10 Sept. 1961. p. 286-293. May 1962. WR 108: 80

In French with English and Italian summaries. The magnitude, route, and pattern of migration of Anser anser, A. a. albifrons, A. fabialis, and Branta b. bernicula through France are outlined.--From summ.

Roux, Francis. THE MIGRATIONS OF WILD GEESE IN FRANCE. 13th Ann. Rept. Wildfowl Trust 1960-61. p. 74-78. 1962. [From paper presented to 5th Congr. Intern. Union Game Biol., Bologna, Sept. 1961.] WR 108: 80

The migration of geese occurs in three distinct movement types across France: the seasonal passage of those birds which cross the country en route to their breeding or wintering places, typified by Anser anser and A. fabalis: movements of populations regularly wintering in France, such as with A. albifrons, A. fabalis, A. anser and Branta bernicla; and occasional invasions due to severe cold in mid-Europe and along the North Sea, as with A. brachyrhynchus and rarer occurrences of A. erythropus, B. leucopsis and B. ruficollis. [See Roux, above, for original paper.]--W. T. Van Velzen.

Stewart, Paul A. (Patuxent Wildl. Res. Center, Laurel, Md.) NESTING ATTENTIVENESS AND INCUBATION PERIOD OF A WOOD DUCK. Bird-Banding 33(2): 85-89, 2 figs. Apr. 1962. WR 108: 80

An automatic recording device was operated at the nest of a wood duck throughout the incubation period. Incubation started about 12 hours before the last egg was laid. The average length of the attentive periods was 19.5 hours and of the inattentive periods 1.5 hours, with no regularity in the time of day of inattentive periods. The eggs hatched in the thirty-first day of incubation. The clutch was believed to have had a natural and undisturbed incubation period.--From summ.

Swanson, Gustav A. (Cornell Univ., Ithaca, N. Y.) WATERFOWL MANAGEMENT AND RESEARCH IN THE UNITED STATES. Trans. 5th Congr. Intern. Union Game Biol., Bologna. 4-10 Sept. 1961. p. 239-248. May 1962. WR 108: 80

In English with German and Italian summaries. A review paper.

Tilgner, Damazy J. (Technol. Politech. Univ., Gdansk, Poland.) AN ASSESSMENT OF COOT (FULICA ATRA). Trans. 5th Congr. Intern. Union Game Biol., Bologna. 4-10 Sept. 1961. p. 30-34. May 1962. WR 108: 80

In English with summaries in German and Italian. After plucking and eviscerating, coots have a low dressing yield amounting to 54.6%. The average carcass composition of coots amounts to 190 g of meat, 100 g bone, and 130 g of skin and subcutaneous fat. Coot meat is relatively fatter than that of partridge. After roasting there is about 180 g of meat, which is "nourishing, very tender, quite palatable although somewhat dry."

Winge, Anders. KNÖLSVANEN (CYGNUS OLOR) I SKÅNE ÅR 1957. [MUTE SWANS IN SCANIA, SWEDEN, 1957.] Vår Fågelvärld 18: 1-11. 1959. [From Bird-Banding 30 (4), 1959.] WR 108: 81

In Swedish. In a census of about 100 lakes, 139 breeding pairs of mute swans were counted and 650 non-breeding birds were estimated. The mean of 4.4 young per nest was obtained.

Wyss, C. Robert. (30 Wynmor Rd., Scarsdale, N. Y.) OLD SQUAW AND RED BREASTED MERGANSER SUCCESS STORY, INCUBATION AND REARING TECHNIQUES. Modern Game Breeding 32(10): 9-12, illus. Oct. 1962. WR 108: 81

This article gives much information helpful to persons attempting to artificially incubate wild waterfowl eggs or to rear artificially hatched ducklings of these two or other species.

Yocom, Charles F. (Humboldt State Coll., Arcata, Calif.) HISTORY OF THE GREAT BASIN CANADA GOOSE IN THE PACIFIC NORTHWEST AND ADJACENT AREAS. Murrelet 43(1): 1-9. Jan.-Apr. 1962. WR 108: 81

Settlement by white men promoted an extension of the breeding range of Canada geese into the area along the lower Columbia and Snake rivers in Wash.

CRANES, RAILS, SHOREBIRDS

Beer, C. G. (Univ. Otago, Dunedin, New Zealand.) THE EGG-ROLLING OF BLACK-HEADED GULLS LARUS RIDIBUNDUS. Ibis 104(3): 388-398, 2 figs. July 1962. WR 108: 81

Model eggs placed near nests of gulls were most quickly rolled into the nests by the birds during egg-laying and incubation periods. Incubation behavior was somewhat disturbed when the model eggs were made immovable.

Bien, Zdzisław, and Kazimierz A. Dobrowolski. ZRÓŻNICOWANIE EKOLOGICZNE MEW (LARINAE) PÓŁWYSPU HELSKIEGO. [ECOLOGICAL DIFFERENTIATION IN SEAGULLS (LARINAE) ON THE HEL PENINSULA.] Ekol. Polska--Ser. A 9(12): 195-218, 8 figs. 1961. WR 108: 81

In Polish with English summary. The distribution of gulls on both sides of the peninsula approximately corresponds to the connection of the various species with fresh or salt water. A basic similarity in diurnal rhythm was found in both groups (sea or bay) and in all species. The number of flights across the peninsula is much smaller than the number of flights along the peninsula. Two populations of gulls are assumed.--From auth. summ.

Boyd, Hugh. (Wildfowl Trust, Slimbridge, Gloucester, England.) MORTALITY AND FERTILITY OF EUROPEAN CHARADRII. Ibis 104(3): 368-387. July 1962. WR 108: 81

In a review of data on 23 species of shorebirds, an inverse relationship was found between death rate and body size. Adult annual mortality rates ranged from 15.7% to 51.9%. Hatching success was 66-96% and survival of chicks 40-80%.--From summ.

Brown, R. G. B. (Univ. Museum, Oxford, England.) THE AGGRESSIVE AND DISTRACTION BEHAVIOUR OF THE WESTERN SANDPIPER EREUNETES MAURI. Ibis 104(1): 1-12, 2 figs. Jan. 1962. WR 108: 81

The breeding biology and aggressive and distraction behavior of the western sandpiper are described from observations made in the Hooper Bay area of western Alaska during the summer of 1960. Motivation of distraction displays is analyzed in detail, and it is concluded that the observed behavior is the resultant of attack and escape tendencies; the brooding tendency is not primarily involved. The function of distraction displays is discussed in relation to human and other predators.--From summ.

Cullen, E., and J. M. Cullen. (Dept. Zool., Oxford, England.) THE PECKING RESPONSE OF YOUNG KITTIWAKES AND A BLACK-HEADED GULL FOSTER CHICK. Bird Study 9(1): 1-6. Mar. 1962. WR 108: 82

Summary: Newly hatched kittiwakes peck less at yellow, the color of the outside of the parent's beak, than at red, the color of the mouth. A single black-headed gull chick, hatched in the nest of a kittiwake, preferred yellow to red, an effect very probably due to conditioning to the foster parent's beak color, though a small proportion of black-headed chicks without experience also show this preference.

Gribble, F. C. CENSUS OF BLACK-HEADED GULL COLONIES IN ENGLAND AND WALES, 1958. Bird Study 9(1): 56-71. Mar. 1962. WR 108: 82

A 1958 census of black-headed gull colonies (to ascertain their distribution and location) was compared with a 1938 survey. A total of 185 colonies containing between 46,000 and 51,450 pairs was recorded for England and Wales, an increase of about 25%. In England 74% of the colonies were less than 1,000 ft above sea level, in Wales 66% were above this height. In England 41% and in Wales 57% hold between 11 and 100 pairs. A large increase in numbers in south-east England is apparent. An increase in the number of inland colonies in England appears due to the colonization of new habitats not available in 1938. Details are given of colonies occupied in 1958, and of colonies used between 1938 and 1957 but deserted in 1958.--From auth. summ.

Hailman, Jack P. (Duke Univ., Durham, N. C.) AGE OF LAUGHING GULL CHICKS INDICATED BY TARSAL LENGTHS. Bird-Banding 32(4): 223-226, 2 figs. Oct. 1961. WR 108: 82

Variability prevents accurate determination of early age from tarsal length in individuals, but several modifications of the method are discussed. This method may easily be adapted to other species.--From summ.

Hamilton, Frank D. CENSUS OF BLACK-HEADED GULL COLONIES IN SCOTLAND, 1958. Bird Study 9(1): 72-80. Mar. 1962. WR 108: 82

An incomplete census was made in Scotland in which 130 colonies of gulls containing 29,000 to 36,000 pairs were tallied. Of 10 colonies accurate enough for comparison with 1938 figures, only one colony showed an increase. Of the colonies for which height above sea level was known, 47.5% were between 500 and 1000. One colony was in the 10,000-12,000 pairs category, one in 5,000-7,000 pairs, and the rest 2,000 pairs or lower.--From auth. summ.

Harris, M. P. (Univ. Coll., Swansea, Wales.) MIGRATION OF THE BRITISH LESSER BLACK-BACKED GULL AS SHOWN BY RINGING DATA. Bird Study 9(3): 174-182, 8 figs. Sept. 1962. WR 108: 82

All bandings and recoveries from 1909 to 1959 are reviewed. Recoveries indicate the main wintering areas of British gulls to be Portugal, southern Spain and the northwest coast of North Africa. A 70% mortality occurs during the first year (83% of African coast recoveries are of first year birds). Of British recoveries, 69% are from birds found dead, 18% from birds killed. Movements within the British Isles are mainly southerly and south-easterly. No support is found for the belief that an increase in overwintering is occurring in Britain in recent years.--W. T. Van Velzen.

Howell, T. R., and G. A. Bartholomew. (Univ. Calif., Los Angeles.) TEMPERATURE REGULATION IN THE SOOTY TERN STERNA FUSCATA. Ibis 104(1): 98-105, 6 figs. Jan. 1962. WR 108: 82

The mean daytime body temperature was 40.5 C and the night temperature 39.4 C for adults on their nests. Heating by solar radiation is the chief environmental problem of nesting sooty terns. Shading of nests by adults prevents overheating of eggs and young when in the nests, and the older chicks seek natural shade.

Liscinsky, Steve. THE PENNSYLVANIA WOODCOCK STUDY. PART III. Pa. Game News 33(11): 30-32, illus. Nov. 1962. WR 108: 83

The movements and migration of woodcock were analyzed through the study of returns of 239 birds banded in Pa. since 1939 and from recoveries of birds banded in other states. More than half of the 45 recoveries made within the state were made within a few hundred yards from the place of banding. Migrational movements start as early as the last week in February, and are heaviest during the last two weeks in March. By the second week in April migration to and through Pa. is completed. Fall migration starts early in October and is completed by the last week in November.--W. T. Van Velzen.

Loftin, Horace. (Fla. State Univ., Tallahassee.) USE OF DECOYS IN NETTING SHOREBIRDS. Bird-Banding 31(2): 89-90. Apr. 1960. WR 108: 83

Shorebird profiles were made of plywood or cardboard and mounted on a wire stuck into the sand 3-4 feet from a mist net on windward side. Netting success of several species was increased.

Loftin, Horace. (Fla. State Univ., Tallahassee.) A STUDY OF BOREAL SHOREBIRDS SUMMERING ON APALACHEE BAY, FLORIDA. Bird-Banding 33(1): 21-42, 5 figs. Jan. 1962. WR 108: 83

Summering records involved late-migrating adults and non-breeding young, with physical handicaps. Physical or physiological factors had no influence on the tendency of northern shorebirds to remain in Fla. Shorebirds may not breed until 2 years of age.--From concl.

Martin, Pant W. (Patuxent Wildl. Res. Center, Laurel, Md.) WOODCOCK STATUS REPORT, 1962. US F&WS, Spec. Sci. Rept.--Wildl. no. 69. iv + 36 p. Nov. 1962. WR 108: 83

Abstract: An index of size of the woodcock breeding population in 1962 was obtained from a Singing Ground Survey conducted in 20 eastern and central States and 4 eastern Canadian Provinces. Bast of the Appalachians, 148 routes run both in 1961 and in 1962 were available for comparison. West of the mountains, 115 comparable routes were covered. The population index showed a slight decrease in the east (-3 percent) and no change in the west. For the 2 regions combined, there was no significant change in size of the breeding population from 1961 to 1962 (index value, -2 percent). An index of woodcock reproductive success in 1960 and 1961 was obtained from age ratios in the hunting kill as determined from wings. For both seasons combined, hunters contributed 21,343 woodcock wings. Age ratios in the hunting kill varied among States and Provinces each year. For the combined kill, the ratio of immatures per adult female was 1.8 in 1960 and 1.9 in 1961. The ratio of immatures per adult male and female in the continent-wide kill was 1.1 in both years.

Moynihan, Martin. (Canal Zone Biol. Area, Panama.) NOTES ON THE BEHAVIOR OF SOME NORTH AMERICAN GULLS. IV. THE ONTOGENY OF HOSTILE BEHAVIOR AND DISPLAY PATTERNS. Behaviour 14(3): 214-239. 1959. [From Bird-Banding 31(2), 1960.] WR 108: 83

Müller-Using, Detlev. (Hann. Münden, Veckenerhage Strasse 70, Germany.) BETRACHTUNGEN ZUR SCHUSSZEIT UND BEJAGUNG DER WALDSCHNEPFE (SCOLOPAX RUSTICOLA L.). [ON THE SHOOTING OF WOODCOCKS.] Trans. 4th Congr. Intern. Union Game Biol., Arnhem/Oosterbeek. 28 Sept.-5 Oct. 1959. p. 58-63. 1960. WR 108: 83

In German with English and Dutch summaries. Arguments are presented for spring shooting of woodcock in Germany. Annual harvests amount to 20,000 for Western Germany and 4,470 for Austria.

Radford, M. C. BRITISH RINGING RECOVERIES OF THE BLACK-HEADED GULL. Bird Study 9(1): 42-55, 7 figs. Mar. 1962. WR 108: 83

Recoveries of British banded black-headed gulls are analyzed. Recoveries in Britain of foreign banded birds are analyzed according to country of origin and comparison made with some foreign recoveries. The results of some foreign investigations are discussed.--From auth. summ.

Serventy, D. L., D. S. Farner, C. A. Nicholls, and N. E. Stewart. (C.S.I.R.O. Nedlands, Western Australia.) TRAPPING AND MAINTAINING SHORE BIRDS IN CAPTIVITY. Bird-Banding 32(3): 123-130, 2 figs. July 1962. WR 108: 84

Triangular two-funnel traps, 42 inches on a side, were operated in batteries of 3 and 4 traps in a line perpendicular with the water line and with one trap partly in the water. During two seasons, 13,359 birds (mostly shorebirds) were trapped. Information is given on enclosures used for keeping birds, water requirements, foods and feeding procedures.

Sheldon, William G. (Univ. Mass., Amherst.) A METHOD OF MIST NETTING WOODCOCKS IN SUMMER. Bird-Banding 31(3): 130-135, 3 figs. July 1960. WR 108: 84

To be effective for woodcocks, mist nets must be at least 15 feet high. With one net above another, nets were attached to rubber bands on rings which were pulled up and down with light ropes. Birds could be removed by lowering the net.

Tinbergen, N. COMPARATIVE STUDIES OF THE BEHAVIOUR OF GULLS (LARIDAE): A PROGRESSIVE REPORT. Behaviour 15(1-2): 1-70. 1960. [From Bird-Banding 31(3), 1960.] WR 108: 84

A well-illustrated report on 14 species of gulls with comparisons drawn from observations on other species. Methods of study, description of displays, causation and origin of displays, and evolutionary aspects are covered.--From abstr. by M. M. Nice.

OTHER BIRDS

Barlow, Jon C. NATURAL HISTORY OF THE BELL VIREO, VIREO BELLII AUDUBON. Univ. Kans. Museum Nat. Hist. Publ. 12(5): 241-296, 6 figs. 7 Mar. 1962. WR 108: 84

A study of the behavior of the Bell's vireo made in Kansas during 1959 and 1960. A description of the habitat is given and seasonal movements are discussed. General behavior is presented with special treatment of vocalization, territoriality and courtship. A section on the breeding-period covers selection of nest-site and nest-building, egg-laying and incubation and the nestling period. Information on fledgling life and reproductive success is included.--W. T. Van Velzen.

Blair, H. M. S. STUDIES OF LESS FAMILIAR BIRDS: 119. GREAT GREY OWL. British Birds 55(9): 414-418, 5 pls. Sept. 1962. WR 108: 84

A compilation of notes on the range, feeding habits and breeding of the American and European races of the great gray owl.--W. T. Van Velzen.

Dobrokhotov, B. P. [THE ECOLOGY OF ARDEOLA RALLOIDES SCOP IN THE VOLGA DELTA.] Trudy Astrakhansk. Gosudarst. Zapovednika 5: 250-261. 1961. [From Biol. Abstr. 40(1), 1962, from Referat. Zhur., Biol., 1962, no. 8I234.] WR 108: 84

Translation [from Russian]. In a colony of 1,650 heron nests, 507 were nests of A. ralloides. Nests were 26 to 36 cm in diameter and at heights of 1.6 to 3 m. Attack by rooks was chief cause of fledgling mortality. An average of 3 fledglings 20 to 25 days old survived to fly away from nests originally containing 5 eggs. Young from each nest fly away together to the south. Adults bring to nest 80-90 g of food daily. Food consists of 30 spp. of animals, chiefly fishes. Good accomplished in destroying predatory insects is 110 times greater than harm in eating of fishes. A. ralloides has become scarce in area and is protected as useful sp.--From abstr.

Drury, William H., Jr. (Drumlin Farm, S. Lincoln, Mass.) BREEDING ACTIVITIES OF LONG-TAILED JAEGER, HERRING GULL AND ARCTIC TERN ON BYLOT ISLAND, NORTHWEST TERRITORIES, CANADA. Bird-Banding 31(2): 63-79, 4 figs. Apr. 1960. WR 108: 84

Much information is included on biology and behavior of species named in title.

Drury, William H., Jr. (Drumlin Farm, S. Lincoln, Mass.) STUDIES OF THE BREEDING BIOLOGY OF HORNED LARK, WATER PIPIT, LAPLAND LONGSPUR, AND SNOW BUNTING ON BYLOT ISLAND, NORTHWEST TERRITORIES, CANADA. Bird-Banding 32(1): 1-46, 7 figs. Jan. 1961. WR 108: 85

Detailed notes are given on the biology, ecology and behavior of the species named.

Eklund, Carl R. DISTRIBUTION AND LIFE HISTORY STUDIES OF THE SOUTH-POLAR SKUA. Bird-Banding 32(4): 187-223, 3 pls. Oct. 1961. WR 108: 85

The south-polar skua (Stercorarius maccormicki) occupies the same nesting territory with the same mate in successive years. The average incubation period is 30 days and the average incubation temperature 96.6° F. Nesting success of 40 nests was 70%. Daily feeding range is up to 8 miles. Distribution is circumpolar, and migration is east and west along the coasts as well as north and south. Circumpolar flights appear to be made by nonbreeding birds during summer. Birds do not return to hatching place until the second year after hatching, and they return to nest for the first time at 5 years of age.--From summ.

Feely, J. M. OBSERVATIONS ON THE BREEDING OF THE WHITE PELICAN, PELECANUS ONOCROTALUS, AT LAKE ST. LUCIA, ZULULAND, DURING 1957 AND 1958. Lammergeyer 2 (2): 10-20, 2 figs. June 1962. WR 108: 85

Nuptial and sexual dimorphism are described. Observations are recorded from pre-incubation through post-incubation periods. Management and conservation to ensure continued survival of the colony are suggested by the maintenance of optimum habitat, the protection of young from flooding and the elimination of human disturbance.--W. T. Van Velzen.

Galushin, F. M. [DATA ON THE DEVELOPMENT OF OSPREY NESTLINGS (PANDION-HALIAETUS-L.).] Uchenie Zapiski Moskov. Gosudarst. Pedagog. Inst. Lenina 4: 180-183. 1960. [From Biol. Abstr. 40(1), 1962, from Referat. Zhur., Biol., 1962, no. 8I245.] WR 108: 85

Translation [from Russian]. Plumage development of the young is described. Young leave the nest at 52 to 57 days of age.

Kenneweg, H. BBOBACHTUNGEN AM ROTMILAN (MILVUS MILVUS L.). [OBSERVATIONS OF THE KITE (MILVUS MILVUS L.).] Z. Jagdwiss. 8(1): 14-18. Mar. 1962. WR 108: 85

In German with English and French summaries. Observations on a population of kites during the breeding seasons of 1959 to 1961 showed a total of between 6 and 12 breeding pairs on an area of 500 qkm. Kites are independent of water in this area and range as far as 10 km while hunting. Only minor predation on poultry was noted.

Laskey, Amelia R. (1521 Graybar Lane, Nashville 12, Tenn.) BREEDING BIOLOGY OF MOCKINGBIRDS. Auk 79(4): 596-606. Oct. 1962. WR 108: 85

More than 250 nests were examined and 900 nestlings banded, during 29 years, at Nashville, Tenn. Descriptions of nest sites, materials used and nest-building behavior are given. Data are presented on egg-laying dates, clutch size, incubation period, and nestling survival. Postnesting behavior is included.--W. T. Van Velzen.

Lind, E. A. ZUR ETHOLOGIE UND OEKOLOGIE DER MEHLSCHWALBE, DELICHON U. URBICA (L.). [ETHOLOGY AND ECOLOGY OF THE HOUSE MARTIN.] Ann. Zool. Soc. Zool. Botan. 'Venana' 21(2): 1-123. 1959. [From Bird-Banding 31(4), 1960.] WR 108: 85

[In German] with English summary. A study of the house martin in Finland. Pair formation, nest building, and nesting behavior are described.--From abstr. by M. M. Nice.

Liversidge, R. (Port Elizabeth Museum, Humewood, Port Elizabeth, South Africa.) THE BREEDING BIOLOGY OF THE LITTLE SPARROW HAWK ACCIPITER MINULLUS. Ibis 104(3): 399-406, 4 figs. July 1962. WR 108: 86
Habitat, territory, territorial behavior, courtship, food, nest building and call notes are described.

Lundin, Allan. EN UNDERSÖKNING AV HORNUGGLANS (ASIO OTUS) FÖDA. [AN INVESTIGATION OF THE FOOD OF THE LONG-EARED OWL.] Vår Fågelvärld 19: 43-50. 1960. [From Bird-Banding 31(2), 1960.] WR 108: 86
[In Swedish] with English summary. A study carried out over five nesting seasons. Among the 2,667 identified prey animals found in owl pellets, small rodents showed an overwhelming predominance. Birds accounted for only 1.3%.--From abstr. by Louise de K. Lawrence.

Norris, Robert A. (427 Eureka St., San Francisco, Calif.) DENSITY, RACIAL COMPOSITION, SOCIALITY, AND SELECTIVE PREDATION IN NONBREEDING POPULATIONS OF SAVANNAH SPARROWS. Bird-Banding 31(4): 173-216, 7 figs. Oct. 1960. WR 108: 86
On the upper coastal plain of South Carolina, Savannah sparrows attained densities as high as 30 birds per acre. On the basis of studies of color-marked, wing-clipped birds in a fenced enclosure, it was determined that the race with relatively large size, moderate conspicuousness, and social dominance was most resistant to predation.

Parovshchikov, F. Ya., and G. N. Sevast'yanov. [DATA ON THE DISTRIBUTION AND BIOLOGY OF OWLS.] Ornitologiya 3: 122-130. 1960. [From Biol. Abstr. 40 (1), 1962, from Referat. Zhur., Biol., 1962, no. 8I248.] WR 108: 86
Translation [from Russian]. Data are provided on the numbers, habitats, migrations, and reproduction of 7 spp. of owls.

Rice, Dale W., and Karl W. Kenyon. (U. S. Fish & Wildlife Service, Sand Point Naval Air Station, Seattle 15, Wash.) BREEDING CYCLES AND BEHAVIOR OF LAYSAN AND BLACK-FOOTED ALBATROSSES. Auk 79(4): 517-567, 21 figs. Oct. 1962. WR 108: 86
A study conducted throughout 2 nesting seasons at Midway Atoll. Both species of albatrosses breed when 7 years old or older. A single egg is laid in Nov. or Dec., and hatches in Jan. or Feb. Both sexes incubate and one parent continually guards the chick during its early stages. Chicks are fed by regurgitation once a day during early guard stage and once every 2.5 to 2.9 days during later stages. The average length of the nesting stage is 165 days in the Laysan and 140 days in the black-foot. Vocalizations and display postures are described.--W. T. Van Velzen.

Rooth, J. OVER HET VOEDSEL, DE TERRENKEUS EN DE ACHTERUITGANG VAN DE OOIEVAAR, CICONIA CICONIA L., IN NEDERLAND. [FOOD, HABITAT SELECTION, AND DECLINE OF THE POPULATION OF THE WHITE STORK IN THE NETHERLANDS.] Ardea 45 (3/4): 93-116. 1957. [From Bird-Banding 30(4), 1959.] WR 108: 86
In Dutch with English summary.

Rowley, J. Stuart, and Robert T. Orr. (Calif. Acad. Sci., San Francisco.) THE NESTING OF THE WHITE-NAPED SWIFT. Condor 64(5): 361-367, 2 figs. + frontispiece. Sept.-Oct. 1962. WR 108: 86
Discovery was made of the nesting of the white-naped swift in caves along the Rio Chontalcoatlan in Guerrero, Mexico, in 1961, where this species was found to deposit its eggs in depressions in dry sand. Notes are presented on breeding activity, food, parasites and behavior. Comments on the taxonomic position of the swift are given.--W. T. Van Velzen.

Skutch, Alexander F. (San Isidro del General, Costa Rica.) LIFE HISTORY OF THE WHITE-TAILED TROGON TROGON VIRIDIS. Ibis 104(3): 301-313, 1 fig. July 1962. WR 108: 86
Information is given on food, voice, and the breeding biology of the species.

OTHER BIRDS--Continued

Taylor, Roland H. (Lower Hutt, New Zealand.) THE ADELIE PENGUIN PYGOSCELIS ADELIAE AT CAPE ROYDS. Ibis 104(2): 176-204, 16 figs. Apr. 1962. WR 108: 87

The total area used for nesting has remained approximately the same in the past 50 years, but there was shifting of nesting sites into more sheltered locations. Birds arrived at the rookery after mid-October, ♂♂ arriving first and starting nest construction. Eggs were laid during 4 Nov.-4 Dec., the usual clutch being 2 eggs. There was little mortality of adults at the breeding ground. The majority of chick losses resulted from predation by the Antarctic skua. Of the young hatching, one-third to three-fourths survived and went to sea. Information is given on nest biology.

REPTILES AND AMPHIBIANS

Anderson, James D. (Rutgers Univ., Newark, N. J.) EGG LAYING AND NESTING IN SCELOPORUS SCALARIS SLEVINI. Herpetologica 18(3): 162-164. 17 Oct. 1962. WR 108: 87

Brattstrom, Bayard H. (Orange Co. State Coll., Fullerton, Calif.) HOMING IN THE GIANT TOAD, BUFO MARINUS. Herpetologica 18(3): 176-180, 1 fig. 17 Oct. 1962. WR 108: 87

Bufo marinus in the non-breeding, non-calling season shows spatial localization with regard to feeding sites. Homing in the non-breeding season is probably largely due to use of visual cues and the retention of previously learned topographic cues.--From auth. summ.

Brock, Elbert M., and Walter E. Howard. (Univ. Calif., Davis.) HOW TO CONTROL SNAKES. Pest Control 30(8): 30, 32, 34, 36, illus. Aug. 1962. WR 108: 87

Holes under houses should be plugged and hardware cloth fences built around areas where children play. Removal of cover reduces food of snakes by reducing small mammal population, as well as reducing hiding places for snakes. Hunting and killing or trapping at the entrance to hibernaculums are sometimes effective. Water poisoned with nicotine sulphate or eggs poisoned with strychnine are methods useful, respectively, where water is scarce and where snakes are a problem around poultry houses. Natural predators of snakes (including bird and mammal predators and king snakes) should be used where feasible. The bounty system has not been successful.

Carpenter, Charles C. (Univ. Okla., Norman.) A COMPARISON OF THE PATTERNS OF DISPLAY OF UROSAURUS, UTA, AND STREPTOSAURUS. Herpetologica 18(3): 145-152, 1 fig. 17 Oct. 1962. WR 108: 87

From observations of more than 50 individuals of Urosaurus ornatus and Uta stansburiana, 25 Urosaurus graciosus and 4 Streptosaurus mearnsi, it is indicated that significant behavioral differences exist between these three genera.--W. T. Van Velzen.

Carr, Archie. ORIENTATION PROBLEMS IN THE HIGH SEAS TRAVEL AND TERRESTRIAL MOVEMENTS OF MARINE TURTLES. Am. Scientist 50(3): 359-374, 11 figs. Sept. 1962. WR 108: 87

In a tagging program conducted on the Caribbean Coast of Costa Rica, 2,000 green turtles (Chelonia mydas) were tagged. Sixty-four were later recovered (all but two from outside of Costa Rican waters). More distant recoveries were from Yucatan, Cuba, and Colombia. Use of telemeters for studying movements of green turtles was suggested.

Cole, Charles J. (134 Woodridge Place, Leonia, N. J.) NOTES ON THE DISTRIBUTION AND FOOD HABITS OF BUFO ALVARIUS AT THE EASTERN EDGE OF ITS RANGE. Herpetologica 18(3): 172-175, 1 fig. 17 Oct. 1962. WR 108: 87

Donoso-Barros, R. (Univ. Chile, Santiago.) ECOLOGIA DE LOS REPTILES CHILENOS. [ECOLOGY OF THE REPTILES OF CHILE.] Invest. Zool. Chilenas 6: 65-72. 15 July 1960. WR 108: 88

In Spanish.

Gorham, Stanley W. (Natl. Museum Canada, Ottawa, Ontario.) THE COMPARATIVE NUMBER OF SPECIES OF AMPHIBIANS IN CANADA AND OTHER COUNTRIES. II. SUMMARY OF SPECIES OF CAECILIANS AND SALAMANDERS. Canadian Field-Nat. 76(2): 90-99. Apr.-June 1962. WR 108: 88

A continuation of previous work to include all valid species up to 1957. A list of total species for every country and a list of species by continents are given.--W. T. Van Velzen.

Heatwole, Harold. (Univ. Puerto Rico, Rio Piedras.) ENVIRONMENTAL FACTORS INFLUENCING LOCAL DISTRIBUTION AND ACTIVITY OF THE SALAMANDER, PLETHODON CINEREUS. Ecology 43(3): 460-472, 4 figs. Summer 1962. WR 108: 88

Salamanders occurred only at sites where moisture content of the environment was above the absorption threshold for the species. Unless movement is prevented, they probably never occupy sites with interstitial relative humidity below 85%.

Mayhew, Wilbur W. (Univ. Calif., Riverside.) SCAPHIOPUS COUCHI IN CALIFORNIA'S COLORADO DESERT. Herpetologica 18(3): 153-161, 2 figs. 17 Oct. 1962. WR 108: 88

Scaphiopus couchi has been found after thunderstorms at Glamis (Imperial County) and is the first report for this species in California. Very high summer temperatures presumably create desiccation problems. Nevertheless, they appear to be able to survive successfully and to reproduce during favorable years.--From auth. summ.

McCoy, Clarence J., Jr., and Donald H. Van Horn. HERPETOZOA FROM OAXACA AND CHIAPAS. Herpetologica 18(3): 180-186. 17 Oct. 1962. WR 108: 88

An account of 120 specimens representing 36 species collected during the summer of 1956.

Partington, William M. HATCHING REPTILE EGGS. Narragansett Nat. 5(3): 84-86, 2 figs. Summer 1962. WR 108: 88

Descriptions are given, with illustrations, for two artificial nests for incubating turtle and snake eggs. Tips on heat and moisture requirements are also given.--W. T. Van Velzen.

Pooley, A. C. THE NILE CROCODILE--CROCODILUS NILOTICUS--NOTES ON THE INCUBATION PERIOD AND GROWTH RATE OF JUVENILES. Lammergeyer 2(1): 1-55, illus. + frontispiece. Feb. 1962. WR 108: 88

Observations of the general behavior habits of captive crocodiles were made at the Mkuzi Game Reserve, Northern Zululand, from Dec. 1957 to Mar. 1960. Experimental studies on the incubation period show growth rates prior to hatching and hatching size. Detailed dentition growth rates and monthly length increases for juveniles are presented for a two-year period. Feeding habits, types of food taken, and sensory organs used in securing food are discussed in some detail. Most data are summarized in table form.--W. T. Van Velzen.

Porter, Kenneth R. (Univ. Denver, Colo.) MATING CALLS AND NOTEWORTHY COLLECTIONS OF SOME MEXICAN AMPHIBIANS. Herpetologica 18(3): 165-171, 3 figs. 17 Oct. 1962. WR 108: 88

Mating call recordings and collections of several Mexican amphibians were made during the summers of 1960 and 1961. Call descriptions, some not known to have been previously described, are given and significant range extensions are indicated.--W. T. Van Velzen.

REPTILES AND AMPHIBIANS--Continued

Smyth, H. Rucker. AMPHIBIANS AND THEIR WAYS. Macmillan Co., N. Y. xv + 292 p., 60 figs. 1962. $6.50. [From Copeia 1962(3), 1962.] WR 108: 89

A popular account of amphibian natural history for the lay reader. The first half of the book covers the major groups of amphibians, their morphology, courtship and mating, eggs and larvae and some aspects of their metamorphosis, respiration, and body temperature. In the remaining half the ecology and life history of amphibians are discussed. Although primarily about North American species, foreign species are used to illustrate special adaptations.

FISHES

Petrushevskii, G. K., editor. PARASITES AND DISEASES OF FISH. Bull. All-Union Sci. Res. Inst. Fresh-Water Fisheries Vol. 42. vi + 338 p. 1957 [1961]. Published for the National Science Foundation and the Department of the Interior by the Israel Program for Scientific Translations. [Available from the Office of Technical Services, U. S. Dept. Commerce, Washington 25, D. C. Price $3.50.] WR 108: 89

Translated from the Russian.

INVERTEBRATES

Oldroyd, Harold. INSECTS AND THEIR WORLD. Univ. Chicago Press. ix + 139 p., 78 figs. 1962. $1.95, paper. WR 108: 89

This unique publication with a fluent text and unusually sharp photographs presents technical information on the classification, anatomy, behavior and diversity of insects and of the effects of insect life on human beings in a very fascinating way.--Robert T. Mitchell.

Paul'son, O. STUDIES ON CRUSTACEA OF THE RED SEA. PART I. S. V. Kul'zhenko, Kiev. [vi] + 164 p. + 21 tables. 1875 [1961]. Published for the National Science Foundation and the Smithsonian Institution by the Israel Program for Scientific Translations. [Available from the Office of Technical Services, U. S. Dept. Commerce, Washington 25, D. C. Price $1.75.] WR 108: 89

Translated from the Russian.

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Manuscript for this issue was completed 28 February 1963

GPO 840902